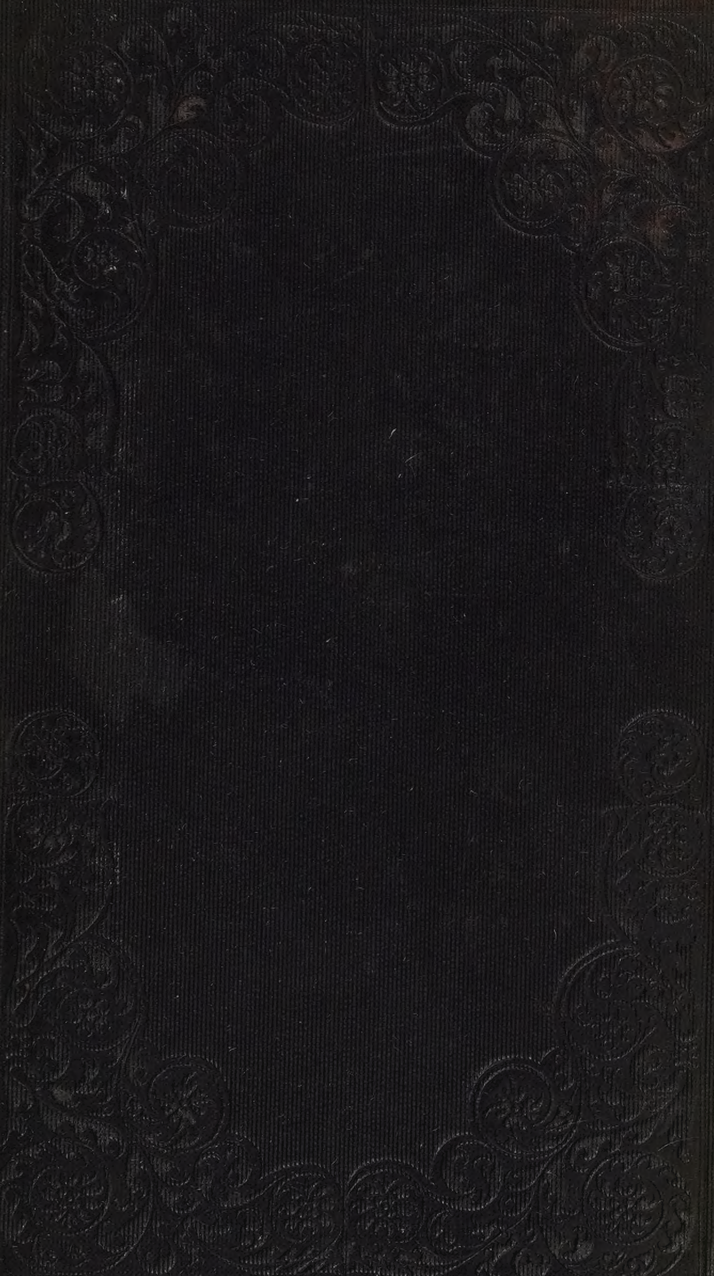

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BRAITHWAITE'S RETROSPECT.

VOL. XVII. JANUARY—JUNE. 1848.

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BEING

A HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND
PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

W. BRAITHWAITE,

LECTURER ON OBSTETRIC MEDICINE AT THE LEEDS SCHOOL OF
MEDICINE, ETC.

VOL. XVII. JANUARY—JUNE.

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CONTENTS OF VOL. XVII.

PRACTICAL MEDICINE.

DISEASES AFFECTING THE SYSTEM GENERALLY.

ARTICLE.		AUTHOR.	PAGE.
1	On Fever	*Dr. Copland*	1
2	On the Use of Camphor in Fever	*Sir James Murray*	3
3	On the Application of Chloroform in Typhus Fever	*Dr. Fairbrother*	5
4	On the Contagion of Yellow Fever		5
5	On Scrofula	*— King*	6
6	On Scurvy	*— Garrod*	9
7	On the Blood and Urine in Gout, Rheumatism, and Bright's Disease	*do.*	12
8	On the Use of Phosphate of Ammonia in Gout and Rheumatism	*— Edwards*	14
9	Quinine in Acute Rheumatism		17
10	On the Use of Vinegar in Rheumatism	*J. C. Atkinson Esq.*	18
11	On the Uses of Cod-liver Oil		
12	Case of General Anasarca Treated by Digitalis	*Donald M'Donald, Esq.*,	21
13	On Buchu in Anasarca	*Mr. Hoskins, &c.*	23

NERVOUS SYSTEM.

14	On the Theory of Convulsive Diseases, especially Epilepsy	*Dr. Marshall Hall*	24
15	On the Irritability of Paralysed Muscles	*do.*	34
16	On the Signs derivable from Paralysis	*Prof. Andral*	41
17	Idiopathic Tetanus treated by Chloroform	*W. H. Cary, Esq.*	44
18	On Intoxication	*G. Corfe, Esq.*	45
19	On Delirium Tremens	*do.*	47
20	On the Use of Tartar Emetic in Chorea and in Cerebral Excitement	*do.*	54

ARTICLE.	AUTHOR.	PAGE.
21 Neuralgia treated by Chloroform	*F. Sibson, Esq.*	55
22 Neuralgia treated by the Actual Cautery	*M. Notta*	56
23 Case of Intercostal Neuralgia cured by Electro-Magnetism	*Dr. Ranking*	57
24 Remedy for Toothache	*— Bushnan*	57
25 Observations on Hysteria	*G. Corfe, Esq.*	58
26 Treatment of Chorea by Emetic Tartar	*M. Salgues*	61
27 On the Treatment of Acute Mania..	*M. Briere de Boismont*	61
28 Case of Loss of Speech Cured by Galvano-Puncture..	*M. Camino*	62

ORGANS OF CIRCULATION.

29 On the Physical Examination of the Blood	*Dr. Copland*	63
30 On the Influence of Obstructed Circulation through the Heart	*do.*	64

ORGANS OF RESPIRATION.

31 On the Structure of Tubercle	*Dr. Lebert*	66
32 On Heautophonics; a New Method of Auscultation	*G. Corfe, Esq.*	67
33 An Alphabet of Auscultation	*do.*	73
34 On Coryza Maligna	*Dr. C. West*	74
35 Case of Acute Laryngitis	*— T. O. Ward*	76
36 On the Treatment of Croup	*— C. West*	77
37 On Spasm of the Glottis	*do.*	82
38 On the Treatment of Hooping-cough	*do.*	84
39 On the Frequency of Pulmonary Disease in Children..	*do.*	88
40 On the Sounds of Bronchitis	*G. Corfe, Esq.*	89
41 On Some of the Effects of Bronchitis in Children..	*Dr. C. West*	90
42 On the Treatment of Bronchitis in Children.. ..	*do.*	92
43 On Lobular Pneumonia	*do.*	94
44 On the Treatment of Pleurisy and Pneumonia ..	*G. J. Guthrie, Esq.*	101
45 On Acute Œdema of the Lungs	*Dr. C. West*	103
46 Chloroform in Spasmodic Asthma	*B. Chandler, Esq.*	104
47 Aphonia Cured by Inhalation of Benzoin Fumes..		105

ORGANS OF DIGESTION.

48 On Diphtherite	*Dr. Coley, &c.*	106
49 On Chronic Enlargement of the Tonsils..	*— Naudin*	107
50 A New Diagnostic of Impaired Digestion	*M. Bean*	107
51 On the Treatment of Chronic Gastralgia	*M. Valleix*	108
52 On the Nature and Treatment of Asiatic Cholera	*Dr. Bell &c.*	108
53 On Flatulence	*— Dick*	132

ARTICLE.	AUTHOR.	PAGE.
54 On the Use of Acetate of Lead in Flatulent Distention of the Intestines	*Dr. Baddeley*	134
55 Ox-gall in Constipation—Efficacy of Ox-gall in Removing Impacted Fæces	*— Vanderpool*	135
56 New Suppository Syringe		136

URINARY ORGANS.

ARTICLE.	AUTHOR.	PAGE.
57 On Acidity of the Animal Fluids	*M. Mialhe*	136
58 On Certain Forms of Alkaline Urine	*Dr. Rees*	139
59 On the Existence of Uric Acid in Healthy Urine	*— Bird*	140
60 On the Pathology of Diabetes	*— Todd*	144
61 On the Use of the Polariscope in Testing Urine	*— Bushnan*	144
62 Turpentine in Diabetes		145
63 Remarkable Case of Disease of the Bladder	*H. Hancock, Esq.*	146

SURGERY.

FRACTURES AND DISEASES OF BONE.

ARTICLE.	AUTHOR.	PAGE.
64 Hint on the Treatment of Fractures	*Bransby Cooper, Esq.*	147
65 On Mollities Ossium	*do.*	148
66 On Distortions of the Spine	*do.*	148

DISLOCATIONS AND DISEASES OF JOINTS.

ARTICLE.	AUTHOR.	PAGE.
67 A Case of Old Dislocation of the Radius successfully reduced	*Dr. Stark*	149
68 Dislocation Reduced under the Influence of Chloroform	*W. B. Page, Esq.*	152
69 On Luxation of the Semilunar Cartilages	*J. P. Vincent, Esq.*	152
70 On Loose Cartilages in Joints	*B. Cooper, Esq.*	153
71 On the Treatment of Chronic Arthritis	*MM. Guerard & Briquet*	154
72 On Gonorrhœal Synovitis	*B. Cooper, Esq.*	155
73 On the Diagnosis of Inflammatory Ligaments	*do.*	155
74 On the Treatment of Ganglion	*do.*	156

AMPUTATIONS.

ARTICLE.	AUTHOR.	PAGE.
75 New Operation on the Foot	*T. Wakley, Esq.*	157
76 On the Amount and Causes of the Mortality of Operations	*Dr. Fenwick*	158
77 On the Necessity of Preparatory Treatment, before Operation	*B. Cooper, Esq.*	168

ORGANS OF CIRCULATION.

78 On Tumours of the Neck connected with Blood-vessels		170
79 Extirpation of Nævi by Ligature	*J. Luke, Esq.*	172
80 Death from Air Entering a Vein in the Neck	*Dr. Willis*	173
81 Cure of Aneurism by Compression	*Dr. Bellingham*	174
82 Description of a New Tourniquet	*H. V. Malan, Esq.*	177

ORGANS OF RESPIRATION.

83 On Œdema of the Glottis from Swallowing Boiling Water	*Dr. Jameson*	178
84 A Case of Sheep's Tooth in the Bronchus	*J. Rayner, Esq.*	180
85 On Wounds of the Chest	*G. J. Guthrie, Esq.*	180

ALIMENTARY CANAL.

86 Practical Hints on Dental Surgery	*John Tomes, Esq.*	181
87 On the Treatment of Indurated Tonsils	*Dr. Naudin*	194
88 On Intestinal Obstruction	*B. Phillips, Esq.*	195
89 On Internal Strangulation of the Intestines	*J. Mackenzie, Esq.*	199
90 On Operation for Hernia External to the Sac	*Dr. Duncan, &c.*	200
91 On the Use of the Taxis in Strangulated Hernia	*T. Hunt, Esq.*	205
92 Chloroform in a Case of Strangulated Hernia	*Dr. Hughes*	206
93 On the Operation for Hernia	*J. Gay, Esq.*	207
94 Case of Strangulated Umbilical Hernia Operated upon after Mr. Gay's Method	*G. B. Childs, Esq.*	209
95 Mode of Arresting Bleeding after the Excision of Internal Hæmorrhoids	*J. P. Vincent, Esq.*	210
96 On the Treatment of Prolapsus Ani	*do.*	210
97 Treatment of Piles and Prolapsus Ani	*J. Taylor, Esq.*	211
98 Curious Case of Recto-Urethral Fistula	*F. F. Giraud, Esq.*	212
99 On Irritable Ulcer of the Rectum	*B. Cooper, Esq.*	212
100 Treatment of the Abscesses which precede Fistula in Ano	*J. P. Vincent, Esq.*	214

URINARY ORGANS.

ARTICLE.		AUTHOR.	PAGE.
101	On Lithotomy, as Performed with a Rectangular Staff	*Prof. Buchanan*	214
102	Case of Sacculated or Encysted Calculus	*Prof. Miller*	221
103	Dry Cupping in Retention of Urine	*M. Vandenbroeck*	224
104	On the Treatment of Spermatorrhœa	*M. Lallemand*	224

SYPHILITIC AFFECTIONS.

105	On Urethral Chancre	*M. Ricord*	227
106	On the Constitutional Syphilis of Infants	*MM. Trousseau and Lasegue*	230
107	On the Treatment of Syphilis in Austria	*M. Sisovics*	231
108	On the Hereditary Transmission of Syphilis	*M. Ricord*	232
109	Operation for Phymosis	*do.*	233

AFFECTIONS OF THE SKIN.

110	On Callous Ulcers of the Leg	*Prof. Syme*	234
111	On the Treatment of Burns		235
112	On Phagedenic Ulcers	*Prof. S. Cooper*	244
113	Ointment for Scald Head		245
114	Treatment of Scabies		245
115	On Traumatic Erysipelas	*B. Cooper, Esq*	245
116	On Chilblains	*Prof. S. Cooper*	246

AFFECTIONS OF THE EYE AND EAR.

117	On the Treatment of Gonorrhœal Ophthalmia	*M. Ricord*	247
118	On the Treatment of Purulent Ophthalmia of Infants by Douches	*M. Chassiagnac*	248
119	On Sloughing of the Corneæ from Defective Nutrition	*W. Bowman, Esq.*	248
120	On Opacities of the Cornea.	*do.*	250
121	On the Local Treatment of Corneitis	*Dr. Jacob*	251
122	On Rheumatic Iritis	*J. Dixon, Esq.*	252
123	On the Treatment of Scrofulous Ophthalmia	*Dr. Edwards*	253
124	On Subacute Inflammation of the Tympanum.	*W. R. Wilde, Esq.*	254
125	On Deafness in Scarlatina and Measles	*Dr. N. Morrell*	256

MIDWIFERY,

AND THE DISEASES OF WOMEN.

ARTICLE.		AUTHOR.	PAGE
126	On Reflex Uterine Action	*Dr. W. T. Smith*	257
127	On Vomiting During Pregnancy	*— Churchill*	262
128	On the Causes of Abortion	*— W. T. Smith*	265
129	Mode of Inducing Premature Labour	*— Simpson*	271
130	Note on Abortion	*— Radford*	271
131	On Sterility	*— E. Rigby*	272
132	On Uterine Hemorrhage	*W. Newnham, Esq.*	279
133	On Placental Presentations		284
134	Two Cases of Internal Hemorrhage	*Dr. Tyler*	302
135	Case of Vagina Imperforate at the Time of Labour	*Dr. Ogden*	303
136	On Rigidity of the Os Uteri	*Mr. Remington, &c.*	305
137	On Turning as an Alternative for Craniotomy and the Long Forceps, in Deformity of the Brim of the Pelvis	*Prof. Simpson*	308
138	Case of Cæsarian Operation	*J. Goodman, Esq.*	323
139	Erysipelas a Cause of Puerperal Fever	*R. C West, Esq.*	325
140	On Amenorrhœa, &c., as Affections of the Ovaries	*Dr. W. Tyler Smith*	327
141	Case of Ulceration of the Lining Membrane of the Uterus, accompanied by Pregnancy	*— Clay*	328
142	On Inflammation and Abscess of the Uterine Appendages	*— H. Bennet*	329
143	On Varicose Ulcer of the Os and Cervix Uteri	*J. Whitehead, Esq.*	331
144	On Preternatural Elongation of the Cervix Uteri	*Dr. Coley*	332
145	On Retroflexion or Retroversion of the Unimpregnated Uterus	*Prof. Simpson*	333
146	Case of Retroversion of the Uterus During Pregnancy	*Dr. Seddon*	350
147	New Instrument for Prolapsus Uteri	*— Reid*	351
148	New Instrument for Prolapsus Uteri	*M. Dubois*	352
149	Case of Polypus Uteri	*Dr. Mitchell*	352
150	On Polypus Uteri	*— Locock*	355
151	New Mode of Applying Ligatures to Polypi	*M. Favrot*	356
152	Removal of a large Fibrous Tumour from the Uterus	*Dr. Simpson*	357
153	On Certain Forms of Headache in Females	*Dr. Murphy*	358
154	Case of Monster	*R. U. West, Esq.*	360

ADDENDA.

155	On the Action of Cod Liver Oil	*Dr. Hughes Bennett*	365
156	On Iodized Oil	*M. Marchal*	366
157	On the Formation of Fat	*Dr. G. E. Day*	367
158	Cases treated by Electro-Galvanism	*J. C. Christophers, Esq.*	369
159	The Electrical Cloth:—a Mode of Employing Electricity by Simple Friction	*M. Meynier*	371

ARTICLE.		AUTHOR.	PAGE.
160	Case of Recovery from a large Dose of Strychnia	*Dr. Anderson*	371
161	Recovery from a large Dose of Aconitina	*— Bird*	372
162	Mode of Arresting the Bleeding from Leech-bites	*J. P. Vincent Esq.*	374
163	On Sea-Sickness..	*Dr. F. W. Fisher*	374
164	On the Use of India-Rubber as Adhesive Plaster	*D. F. Eyre, Esq.*	375
165	On the Treatment of Mammary Abscess		376
166	How to Prevent Bedsores..	*Dr. Purefoy*	377
167	On Animal Ligatures..	*Mr. Wragg*	377
168	On Hospital Grangrene	*Holmes Coote, Esq.*	377
169	On Gangrena Senilis..	*Prof. Syme*	379
170	On the Treatment of Snakebite	*W. Bland, Esq.*	380
171	New Instrument for Tarsal Tumours	*W. R. Wilde, Esq.*	381
172	On the Treatment of Caries	*E. W. Tuson, Esq.*	382
173	Extraction of a Fish-Hook from the Œsophagus..		384
174	On Partial Dislocation of the Fore-arm Backwards	*Dr. Stapleton*	385
175	On the Ventilation of Rooms	*Mr. Small*	387
176	Rapid Mode of Procuring Vesication		387
177	New Caustic Holder	*T. J. Pettigrew Esq.*	387
178	On Tincture of Acetate of Iron	*M. Donovan, Esq.*	387
179	On "Muriate of Opium"	*Dr. Nichol*	389
180	How to make Decoction of Aloes	*R. W. Westall, Esq.*	389
181	The Composition of Milk		390
182	Coffee as a Disinfecting Agent..	*F. Weber*	390
183	A New and Cheap Deodoriser..		391
184	Apparatus for Chlorine Fumigation		391
185	On a New Preservative Fluid	*Dr. Stapleton*	392
186	On the Use of Chloroform and Ether	*Mr. Sibson*	392
	do. do.	*Mr. Wakley*	394
	do. do.	*Dr. Snow*	394, 421
	do. do.	*Mr. Lansdown*	397
	do. do.	*Mr. Curling*	399
	do. do.	*Dr. Cornwall*	400
	do. do.	*Dr. Simpson*	401
	do. do.	*Mr. Robinson*	402
	do. do.	*Mr. Erasmus Wilson*	402
	do. do.	*M. Guersant*	403
	do. do.	*Dr. Clay*	404
	Substitute for Chloroform	*M. Poggiale*	404
	On Chloroform in Midwifery..	*Dr. Simpson*	405
	do. do.	*Dr. Murphy*	409, 413
	do, do.	*Dr. Rigby*	410
	do. do.	*Mr. I. Brown*	410
	do. do.	*Joshua Parsons, Esq.*	411
	do. do.	*Dr. Arnott*	411
	do. do.	*J. B. Hancorn, Esq.*	412
	do. do.	*W. J. Kite, Esq.*	412
	do. do.	*Dr. Ashwell*	413
	do do.	*Mr. Fearn*	415
	do. do.	*Mr. Clifton*	415
	do. do.	*Dr. Bennet*	416
	do. do.	*Dr. Protheroe Smith*	416
	do. do.	*Dr. Meggison*	416
	do. do.	*H. G. Potter, Esq.*	417
	do. do.	*Ed. Med. Gazette*	419
	On the Treatment of Poisoning by Chloroform Inhalation	*M. Rayer*	422
	On the Physiological Local Effects of Anæsthetic Agents	*T. Nunneley, Esq.*	423

SYNOPSIS.—INDEX.

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PRACTICAL MEDICINE,

&c. &c.

DISEASES AFFECTING THE SYSTEM GENERALLY.

Art. 1.—ON FEVER.

By James Copland, M.D., F.R.S., &c. &c.

[A very interesting question arises in the study of fever, as to the manner in which the blood and the various organs become affected. Is the morbific influence conveyed to the secreting and other organs by means of the blood or of the organic nervous system, or by mere continuity and contiguity of surface and structure? And is the blood itself affected by the direct contact of a poison, or by nervous influence, or by failure of the excreting processes? Dr. Copland shall answer. He observes,—]

It would be interesting, observes Dr. C., to trace the manner in which the different systems of the frame become affected during the progress of various fevers. There is a certain class, for instance, that has been called periodic fevers; others, typhoid fevers; and others, pestilential or malignant fevers. Fevers have been variously classed; indeed they admit of a variety of classifications. With respect to periodic fevers, or those that arise from malaria, it may be remarked, that the morbid influence producing them seems to implicate especially the organic nervous system. There are various reasons for believing that this system is primarily affected, and that the fluids and abdominal viscera become more or less disordered secondarily. These reasons appear to be, first, the long period of incubation in many of the periodic fevers. Intermittent fever may not appear until many weeks after the individual has been exposed to malaria, and then the paroxysms occur at intervals. We know that morbid impressions, or irritations, or other morbid conditions affecting nervous parts, usually assume a periodic character. If it were the blood which is affected in these cases, we might infer that that state of the blood which existed during the paroxysm would most likely continue without intermission until removed: and that, instead of an interval, when comparatively little disorder is felt, the disease would be continued; for we observe that, in proportion as the blood becomes affected in fever, so does the disease assume a more and more continued type. There are various lesions prominently affecting particular organs, and which give fevers variety of character: thus we have gastric fever, bilious fever, and so on.

If we proceed to the consideration of the worst forms of fever, for instance, typhus, or pestilential fever, not only is the nervous system affected—the organic nervous system being probably the first to be impressed with the cause of the disease—but also the blood itself soon becomes more or less disordered—becomes physically changed.

Now the question is, whether this change produced so early in the blood in typhoid and pestilential fevers arises primarily from the absorption of the cause into the blood, or whether it arises from the morbid impression made on the organic nervous system, owing to which impression the excreting or depurating functions, which are under the influence of this system, are impaired or arrested, and the circulating vessels and fluids become affected, and ultimately changed ? I may point out to you how copiously the vascular system is supplied by the organic or ganglial system; and hence we may expect, *à priori*, that causes affecting this system will, to a co-ordinate extent, affect the vascular system and the fluids in the vessels. We find that, in the progress of fevers, the blood becomes changed; and the change may arise partly from the impression made by the emanations causing the fever, upon the organic nervous system, and partly from the absorption of the emanation—of the morbid poison—into the circulating mass. I believe that the morbid effluvium, being received into the lungs with the air, injuriously affects the organic nervous system supplying these organs: hence the blood in the lungs is not sufficiently changed. Possibly partial absorption of this effluvium may take place into the blood itself; but if it does not, there is a still stronger reason to infer that the morbid impression extends throughout the organic nervous system, impairing the influence of it upon the vascular system, and in the secreting and excreting viscera. The organic nervous power being depressed, it naturally follows that the organs supplied by this system will be impaired in function; and hence we find that, in the first days, or within the first twenty-four hours of fever, the functions of the excreting organs are very remarkably diminished, or even suppressed; and the consequence is, that the blood, which may have been hitherto unaffected, becomes changed; or, if it have been already affected by the cause of the disease, or by the impression on the ganglial system, becomes still further changed. Thus the one change reacts on the other, and promotes it, until at last the changes in the organic or vital nervous influence, and in the vascular system and circulating fluids, become so great, that the blood is not only altered sensibly as it respects both its physical characters and its chemical qualities, but the tissues and organs themselves become more and more disorganized, or evince a remarkable loss of their natural vital cohesion, especially in distempers of a malignant character.

Medical Gazette, Nov. 12, 1847, *p.* 840.

2.—*On the Use Camphor in Fever.*—By Sir JAMES MURRAY.—At a meeting of the Medical Society of London, Sir James Murray, after alluding to the disadvantages attending the exhibition of camphor in the usual form, exhibited to the Society a solution of camphor in his fluid magnesia. In this preparation it is administered more easily; it is almost tasteless, the flavour of the magnesia being also masked by it. One ounce contains three grains of camphor; it does not turn white when mixed with water, nor does it separate in the stomach; in fact, the camphor will not separate unless the liquid is either boiled or frozen; an ounce of it forms a very convenient and efficacious dose as a stimulant; if frequently repeated, and in larger doses it acts as a sedative. Sir James mentioned that the solution could easily have been increased in strength. He had found this proportion of soluble camphor of great use in the fever now so generally prevailing, which was characterized by great prostration, mental confusion, oppression, and despondency, owing to previous debility from bad food, impure air, and privations, the blood being thin and dark-coloured from imperfect arterialization. Diarrhœa is a very general symptom, attended with severe pain over the stomach and colon on the slightest pressure; even when subacute inflammation existed in the alimentary cavities, and where wine and ordinary stimulants would be hurtful, Sir James has found this fluid camphor admirably adapted to support the general strength. He had found it very useful in some cases, where, on account of delirium and cerebral excitement, leeches and local depletion were at the same time necessary. Under its use the tongue became moist, the skin softened, the pulse was reduced in frequency, and it seldom failed to relieve that oppressed breathing which is so often the result of debility. This preparation also enables us to distinguish between delirium from exhaustion, and delirium from an inflammatory state of the brain. In the former, it continues to exhibit an improvement which cannot be mistaken, and in the latter, it sustains the vital powers until suitable depleting means can be carried out. Again, where weakness is caused by diarrhœa, the moderate proportion of fluid magnesia, which forms part of this liquid camphor, prevents acids and crudities in the alimentary passages, and forms a very valuable vehicle in which to administer opiates and other remedies. The low degree of vitality prevalent in these fevers greatly augmented the disposition to gangrenous sores and sloughing ulcers—in these cases the aqueous solution of camphor presents many advantages over its spirituous applications; the watery solution, not being volatile, remains fixed and durable where applied in poultices, lotions, or embrocations; whereas when a tincture is used the spirit flies off by evaporation, leaving the camphor in the state of an irritating frost-work on the skin. It also forms an excellent collyrium in scrofulous affections of the eyelids, and a soothing application to painful swellings, sprains, or bruises; for removing the fœtor of bed sores and ulcerated surfaces, it is particularly well adapted.

Professor Hart, of Dublin, assured Sir James that it was one of the most effectual medicines for the prevention of cramps and collapse, and that camphor was always a most useful stimulus in the extensive cholera hospital under his charge. It does not, like other stimulants, augment the danger of congestion. Fluid camphor is a very valuable agent in abating nervous or spasmodic constriction during fits of asthma, where there is not any organic alteration. The liquid magnesia combined with this fluid tends to preserve a more healthy condition of the alimentary organs, a precaution always to be observed in the treatment of asthmatic ailments. From the known properties of camphor in destroying white-blooded animals, Sir James Murray was induced to administer the fluid camphor both by the stomach and by enema, for the destruction of intestinal worms, with considerable success, the worms being expelled dead.

Dr. Copland said that he had given camphor in every dose. When he was in Germany, soon after the peace, low fever was very prevalent, and camphor was the remedy usually adopted, three grains being administered every four or five hours. One ounce of this solution, containing three grains, would generally prove a sufficient dose, frequently repeated; but in low fever it is sometimes necessary to give fifteen-grain doses three or four times a day, combining it with calomel and opium. This preparation seems an excellent one; for, when given in a solid form, it irritates the stomach, and in the ordinary solutions the camphor soon separates, and spirituous tinctures cause unpleasant eructations. There is nothing empirical about it, as the mode of preparation is known by the profession. In asthma he had found camphor a most effective remedy dissolved in spirit of aniseed. In these cases the fluid camphor will most likely prove very useful. In his Dictionary he has recommended camphor in very many diseases.

Dr. Copland had given camphor in fifteen-grain doses, and up to forty grains in twenty-four hours. In small doses it is a cooling, refrigerant medicine; in three-grain doses it is restorative and soothing, and slightly soporific; above five grains it is stimulant; in large doses it produces delirium and cerebral excitement—hence its benefit in coma and the last stage of fever. Crude camphor will produce ulceration when in contact with a mucous surface. When mixed with mucilage, &c., it is quickly absorbed, and passes off by the lungs and skin; very little by the kidneys. When injected into the bowels, it produces its effect very rapidly. When the puerperal fever was so fatal twenty years ago in the lying-in hospital, camphor was tried in large doses, from ten to fifteen grains, repeated every five or six hours, and only three deaths afterwards took place. Opium was combined with it, and turpentine injections occasionally administered. Camphor is a capital remedy in worms, particularly when they are thread-worms. He has often been in the habit of giving camphor with carbonate of magnesia, rubbed up with or without mucilage. But in this state of permanent solution the remedy can display its efficacy at once; it is therefore an important improvement.

Lancet, Nov. 20, 1847, *p.* 553.

3.—*On the Application of Chloroform in Typhus Fever.*—By Dr. A. Fairbrother.—[The following case occurred in the Bristol General Hospital.]

The patient, a female about 18 years of age, exhibited all the symptoms of a bad case of typhus fever. The usual remedies were tried for a fortnight without any beneficial effect. The unfavourable symptoms continuing, the patient being delirious, and the system worn out for want of sleep—in fact her life was despaired of—it occurred to me that chloroform, being used in operations to produce a sedative effect. if the patient could be kept in the same state continuously, it would reduce the too rapid circulation of the blood through the lungs, relieve the the difficulty of breathing, and thus become efficacious in subduing the excited state of the brain and system in such cases, or in others of an inflammatory nature. I accordingly tried the experiment, commencing with ten minims administered in a cup-shaped sponge, inclosing the mouth and nostrils, but occasionally admitting atmospheric air. About ten minutes were occupied in the inhalation. The soporific state was induced in a few seconds, and continued for about half an hour. In about four hours, the chloroform was again administered, the quantity being somewhat increased, and the inhalation was now continued for half an hour. The patient slept from this time (12) till 4. She took a little porter and again slept till 8 o'clock. The application was then repeated, and has been continued for several days; the quantity of chloroform being gradually increased to twenty-five minims, and the time of inhalation to forty minutes, guided in these particulars by the state of the pulse.

No other medical treatment has been adopted; the only other means used being the sponging of the body with tepid water, and applying cold pads to the head. The system was supported by beef-tea, porter, wine, &c., and to allay thirst, toast and water. The patient is now recovering; the pulse is reduced from 130 to between 70 and 80; the tongue is clean and moist; the skin cool, diarrhœa has ceased; the appetite is returned, and the countenance is regaining its natural aspect.

Medical Gazette, Jan. 21, 1848, *p.* 102.

4.—*On the Contagion of Yellow Fever.*—[A writer in the British and Foreign Medico-Chirurgical Review, arrives at the following conclusions from an examination of the evidence hitherto offered on this subject.]

1. That yellow fever is decidedly contagious on some occasions.

2. That the proofs of the universality of this property are defective. Importation can seldom be proved; inoculation is impossible, and the disease requires a peculiar susceptibility of constitution in order to act.

3. That it is not safe to generalize from the first observation, and to conclude that yellow fever is at all times contagious because it is undoubtedly so sometimes, for these reasons:

a. Because there are fevers undistinguishable by symptoms from contagious yellow fever, which certainly are not contagious.

b. Because we are not sure how far contagion may not be an accidental property impressed on a poison by contingent circumstances, or may be only the development of a property of self-reproduction always possessed by the morbid poison, but generally in so slight a degree as to be inappreciable. If the former opinion be correct, yellow fever is both contagious and non-contagious; if the latter, it is also in the majority of cases non-contagious, in the conventional meaning of the term.

4. That contagion is only a property accidentally impressed on the yellow-fever poison appears probable.

a. Because in no other way can we explain the extraordinary discrepancies and opposing statements of men, whose honesty of purpose is undoubted.

b. Because it is almost a necessary assumption, in order to explain certain facts in the history of yellow fever.

c. Because it is in accordance with analogous phenomena manifested by other morbid poisons.

d. Because there is really some direct proof of it in the apparent development of fever on board ships with clean holds, and removed from the influence of the land.

5. That if this conversion of a non-contagious into a contagious poison be denied, there is no alternative but to admit the existence of a specific contagious yellow fever.

6. That the doctrine of a specific contagious yellow fever is alone supported by the fact that it destroys the necessity of admitting the convertibility of poisons, a circumstance considered by many observers as in the highest degree unlikely and unphilosophical.

British and Foreign Medico-Chirurgical Review, April 1848, *p.* 388.

5.—ON SCROFULA.

By Dr. King.

[The following propositions laid down by Dr. King, are illustrated and supported by numerous facts.]

Prop. 1. The grand source of scrofula is the direct hereditary principle.

2. Scrofula is also hereditary in the collateral branches when it is latent in the direct ones.

3. When second marriages take place, if both parents are healthy, the children will be unhealthy: if either parent be scrofulous, the children will be scrofulous.

4. Persons who have been scrofulous in youth may appear to have been cured, and to have got into good health, but the constitutional taint remains, and the children will be scrofulous.

5. Phthisis is a form of the scrofulous constitution, and its most fatal form. It is the great sledge-hammer. Sydenham had advanced so far in pathology as to call phthisis "scrofula in the lungs." Portal was of opinion that congenital phthisis, "phthisie d'origine," was scrofulous. Bayle and Laennec say the same, but less decidedly, which to our eyes appears strange. An eminent writer of the present day may be quoted as a proof that medical men have not at present very clear ideas upon this subject. He says scrofula is a form of cachexia—*i.e.* cachexia is the cause of which scrofula is the effect. It would be more correct to say, scrofula, or the scrofulous constitution, is the cause of which cachexia is the effect. Cachexia is a form of scrofula. Cachexia has many causes, of which a very important one is scrofula.

6. Scrofula and phthisis coexist in the same family.

More than half the scrofulous patients have parents or ancestors who died of phthisis. Of 84 cases in the hospital of St. Louis, at Paris, more than half had consumptive parents.

All the patients in the hospital at St. Louis who died of the various forms of scrofula, had tubercles in the lungs. They sometimes die of other forms of scrofula, but the most common cause is phthisis, or tubercles in the lungs. They often recover from the other forms of scrofula, and then die of phthisis; and for this reason the most experienced medical men are very cautious in their mode of curing local scrofulous affections, for fear of metastasis to the lungs. They always endeavour to do it upon an alterative,—*i. e.*, a constitutional principle; so that the cure may be the effect of an improved constitution, and the improved constitution the effect of the treatment.

7. Persons who are scrofulous in youth sometimes become strong after puberty; but the taint remains, and the children are scrofulous. The parents try to conceal the scrofula of their youth, which makes it difficult for the physician to trace the constitution of the child.

8. Parents who do not appear to be scrofulous themselves, but whose brothers or sisters are so, have scrofulous children. The family taint seems to pass through them to the children.

We shall now endeavour to point out certain causes which seem to originate scrofula, or the scrofulous constitution, or poison, independent of hereditary taint.

Cause 1.—The first cause is syphilis; which, in many cases, is obvious: and in others, when the parents conceal it, it can only be inferred. If a parent has had both syphilis and scrofula, the poison is doubled.

The eruptions, ophthalmia, ulcerations, and caries, of the two diseases, are often very similar; but, as syphilis is cured by mercury, and scrofula not, the result of treatment is a sure test of the nature of the disease.

Syphilis is accidental, contagious, and curable. Scrofula is constitutional, not contagious, and incurable, or, at least, difficult of cure. Scrofula always existed. Syphilis did not exist in Europe till about A.D. 1500.

The disease derived from syphilitic parents is not primary but secondary syphilis, syphilitic cachexia, or scrofula. Spain has been overrun by this disease subsequent to the introduction of syphilis.

The antiphlogistic treatment of syphilis, instead of the mercurial, is a cause of scrofula, because the cure has not been radical.

Cause 2.—The second originating cause of scrofula is the excessive abuse and indulgence of the sexual instinct. One instance will illustrate the principle :—

All the children of a family had scrofulous affections: hæmoptysis, ophthalmia, pulmonary tubercles, worms. One little girl had abscess in the left sub-maxillary region, was of pallid complexion, with large mouth and decayed teeth. The chief cause appeared to be the early sexual dissipation of the father. Cases like this, as well as those which are of syphilitic origin, illustrate the remarkable and forcible expression of Job, (c. 20, v. 11) "his bones are full of the sin of his youth."

This is one of the many ways in which wealth may prove a curse. Wealth is power, and the first tendency of power is to abuse itself, in all the modifications of which that power is susceptible.

Cause 3. A third originating case of scrofula is *premature* indulgence of the sexual instinct, and *premature* marriage. If the offspring are to be healthy, strong, and vigorous, no man ought to marry before the age of 25.

The secretion of the seminal fluid, like all other parts, is and must be subject to laws which decide its health and vigour. The secretion should not be too rapid or frequent, and it should also be spontaneous, *i. e.* the natural effect of a healthy organism, and not of a mere mental action, or effort or imagination.

Cause 4.—A fourth originating cause of scrofula is marriage too *late* in life.

The debility produced by early sensuality may be in some measure remedied by moderation, restraint, and time, by change of mind, thought, imagination, desire, and intellectual occupation. But the debility produced by old age can never be remedied.

The generative faculty is said to begin to decline about the age of 45, which may be called its culminating point. It then begins to decay slowly at first, and more rapidly afterwards. Those who marry late in life may have one or two children strong, but every child is weaker than the preceding ones, and the youngest are the weakest. The old man's child is become a proverb for visible debility stamped upon its physiognomy. Many of them die at birth. Some are precocious in childhood, and then suddenly fade, and become effete and stunted, like the withering and dropping off of fresh fruit in autumn;—they are born out of season.

The period of weak fecundity in woman commences about forty. After this time pregnancy is often a delusion, or there is imperfect conception and miscarriage, or the child perishes at birth, or, if reared it is delicate and scrofulous.

Cause 5.—A fifth originating cause of scrofula is disproportionate age and unequal vigour. When the father is younger than the mother, it may be a cause of scrofula.

Cause 6.—A sixth originating cause of scrofula is paralysis, epilepsy, lunacy, and other diseases of the brain.

Medical Gazette, Nov. 5 & 19, 1847, p. 103, 890.

6.—ON SCURVY.

By Dr. A. B. Garrod, Assistant Physician to University College Hospital, London.

[It seems to have been fully proved that whatever circumstances may influence the production of scurvy, its immediate cause is to be sought for in the nature of the food; in the absence or deficiency of one or other of its *organic* or *inorganic* constituents. Dr. Garrod points out many objections to the opinion that a deficiency of any of the *organic* constituents of the food produces scurvy; and states that from minute researches into the composition of scorbutic or antiscorbutic articles of diet, and into the state of the blood in scorbutic patients, he has been led to the following conclusions:—]

1st, That in all scorbutic diets, *Potash* exists in much smaller quantities than in those which are capable of maintaining health.

2nd, That all substances proved to act as anti-scorbutics contain a large amount of *Potash.*

3rd, That in scurvy the blood is deficient in *Potash*, and the amount of that substance thrown out by the kidneys less than that which occurs in health.

4th, That scorbutic patients will recover when *Potash* is added to their food, the other constituents remaining as before, both in quantity and quality, and without the use of succulent vegetables or milk.

5th, That the theory which ascribes the cause of scurvy to a deficiency of *Potash* in the food, is also capable of rationally explaining many symptoms of that disease.

[The first proposition is proved by an examination of the dietary of the Crediton Union, *(see Prov. Med. and Surg. Jour., June,* 1847*).*

After giving a statement of the amount of potash contained in various articles of food, Dr. Garrod says,]

If we estimate the amount of potash taken by the inmates of this workhouse, we shall find the men's food to contain about 186 grains, and the women's about 181 grains. This amount would be much influenced by the mode in which the potatoes were cooked; if not too much boiled, and with the skins on, they would contain a much larger amount of potash than if boiled without their skins, and much done. Under this diet the inmates remained healthy; but, owing to the scarcity of potatoes, boiled rice in equal weights was substituted, and in a few months the inmates became scorbutic. When the substitution was made, the weekly amount of potash taken by the men was about 51 grains, and by the women 46 grains, or a reduction of more than two-thirds took place. Rice and potatoes do not differ much in their composition, except in the salt of *potash* contained by the latter. Both contain starch and vegetable albumen. In the weekly diet list for the military prisoners at the Milbank Penitentiary, when they were subject to scurvy, (see Dr. Baly's paper in *London Medical Gazette*, Vol. I. 1841-2,) we find the amount of potash taken by each prisoner during the first three months of imprisonment to be about 44 grains; during the second three months, about 50 grains; after six months, about 68 grains. At present, when potatoes are added, the weekly amount of potash is from 210 to 230 grains, and no case of scurvy has arisen since the change.

[Several other confirmatory facts are adduced, and Dr. Garrod proceeds to show that,]

All bodies proved to be anti-scorbutic contain a large amount of potash.—All fruits contain this substance in abundance, as oranges, lemons, limes, grapes, gooseberries, &c., and these are all highly anti-scorbutic. Potatoes also, which perhaps are the most valuable as an addition to a dietary for the purpose of preventing scurvy, and owing to the scarcity of which article this disease has been so prevalent within the last two years, contain, as the above analyses prove, a very large amount of potash, and when boiled (not too much, and unpeeled), still retain most of that ingredient; this also accords with the fact, that potatoes, when cooked in the ordinary way, are anti-scorbutic, and at the same time explains why the hard core of that tuber, which is so much liked by the Irishman, is most powerful in preventing the occurrence of scurvy.

[Milk and fresh meat, cabbages, onions, turnips, spruce beer, &c., also contain considerable quantities of potash. As to the condition of the blood, Dr. Garrod found that the blood of a scorbutic contained little more than one-third of the amount of potash that is contained in healthy blood.

To come to the practical application of these facts, Dr. Garrod shows that,] *Scorbutic patients, when kept under a diet which gave rise to the disease, recover, when a few grains of Potash are added to their food.*—In several cases which came under my care, the treatment consisted in the daily administration of a few grains (from 12 to 20) of some salt of potash mixed with syrup and water. Sometimes the bitartrate, at other times the acetate, and also the carbonate and phosphate were used. All the salts appeared to act alike, and I have little doubt but the chloride of potassium would be found equally efficacious. When the cases were thus treated, all vegetables, milk, and malt liquors were strictly prohibited; and yet the patients rapidly recovered. Other cases were treated by fresh vegetables and milk; these also recovered, but certainly not more quickly than those from whom these substances were withheld, and potash salts substituted. On looking over the works of several writers on scurvy, I have frequently found that some *Potash* salt has been administered with *marked* benefit; thus, nitre has been recommended, nitre dissolved in vinegar, the bitartrate of potash, the oxalate of potassa; but the efficacy has always been ascribed to the acid contained in these substances, and no attention has been paid to the base.

The theory which ascribes the cause of scurvy to a deficiency of Potash in the system, is capable of explaining some of its symptoms.—Both soda and potash are constant constituents of the animal body, and it appears that they are not capable of replacing each other ; for example, we always find the potash to exist in large quantities in the ash of muscle, soda in very small quantities (Berzelius, Liebig); in the ash of the blood we find the relation reversed. It appears also, that the muscular system requires the presence of potash, and we should therefore expect to find that where there is a deficient supply of this base, the effect would soon be manifested in the functions of that system. This we find to be the case in scurvy; without any amount of wasting of the body we find marked muscular debility, and this perhaps is one of the earliest symptoms of the disease.

Conclusion.—I have ventured to make public this theory of the cause and nature of scurvy sooner than I otherwise wished, both on account of the difficulty of procuring cases of this disease at the present time, and from the conviction that its being made known to the profession at large would be the most ready mode of having it confirmed or disproved. If true, it will be seen at once that its applications will be of the utmost importance, and the occurrence of scurvy, both at sea and on land, can be most readily prevented, by the introduction of a few grains of some potash salt, as the phosphate, chloride, tartrate, &c., into the food, or by these being taken in a separate state. At sea, its applications would be invaluable, from the cheapness, stability, and the small space occupied by the remedy, when compared with lime juice; from its being at all times to be procured from the ashes of wood or plants, especially tobacco, which contains it in abundance. If found to be a mere hypothesis, I have this apology to make, that in my mind it accounts better for the occurrence of this disease than any other yet offered; and it will still be an interesting fact, that *Potash* always accompanies the *real* antiscorbutic principle, was found deficient in scorbutic blood, and that several cases of scurvy rapidly recovered under the use of some of its salts, without the administration of any other remedy, dietetical or medicinal.

Monthly Journal of Medical Science, Jan., 1848, *p.* 457.

7.—ON THE BLOOD AND URINE IN GOUT, RHEUMATISM, AND BRIGHT'S DISEASE.

By Dr. Garrod.

[Dr. Garrod says that the balance of opinions is in favour of the humoral pathology of gout, but that up to the time of his late researches, there had been no proof of the nature of the materies morbi. He says that—]

1st. In gout the blood always contains uric acid, and that this body can be crystallized from that fluid in the form of urate of soda.

2nd. That the uric acid is diminished or absent in the urine immediately preceding the gouty paroxysm.

3rd. That in patients subject to chronic gout with tophaceous deposits, the uric acid is always present in the blood, and deficient in the urine, both absolutely and relatively to the other organic matters, and that the chalk-like deposits appear to depend on an action in and around the joints, &c., vicarious to the "uric acid secreting function" of the kidneys.

4th. That the blood in gout sometimes yields a small amount of urea (no albumen being present in the urine.)

Quantitative analyses and observations in favour of these conclusions were then detailed, and also the method used for separating the uric acid and urate of soda from the blood. Dr. Garrod thought it probable that the presence of a small amount of urea in gouty blood might be the cause of one of the symptoms which distinguished gouty from rheumatic inflammation,—viz., the slightly œdematous condition of the inflamed part.

The author next spoke of some experiments made on the blood of the sheep, and of birds. Sheep's blood was not found to contain uric acid, and even from the blood of the pigeon, whose urine consists entirely of that substance, none could be obtained. Human blood, from patients in tolerable health, was always found to yield a trace of uric acid, but a quantity exceedingly minute, compared with the amount in gouty blood.

The next researches were made on patients suffering from acute rheumatism, and it was found that rheumatic blood contains no more uric acid than the healthy fluid, and no urea can be extracted from it. Analysis made on the blood and urine in Bright's disease appeared to show that in albuminuria; 1, the blood always contains uric acid, but that the amount of this substance is subject to great variation; 2, that urea exists in large quantities in the blood, (which has been proved long since,) and that there appears to be no relation between the amount of the urea and uric acid; 3, that the kidneys are always deficient in their power of throwing off urea, but that, with regard to the uric acid, their excreting function is sometimes much injured, at other times little affected.

In conclusion, the author thought that the results detailed in the communication led to the inference, that uric acid is not a product of the action of the kidneys, (as has been often supposed,) but that it is merely excreted from the system by these organs; also that the excreting function of the kidneys, for the solid portion of the urine, is not simple, but that the urea and uric acid are separately eliminated, and that one of these functions may be impaired or destroyed, the other remaining entire; it appears also probable that, as in albuminuria, "the urea excreting function" being chiefly impaired, we find a vicarious discharge of this body in the dropsical effusions; so in gout the "uric acid excreting function" being defective, the tophaceous deposits are produced by a similar vicarious discharge of urate of soda. Gout would thus appear to depend on a loss of power, temporary or permanent, of the "uric acid excreting function" of the kidney; the premonitory symptoms, and those also which constitute the paroxysm, arising from an excess of the acid in the blood, and the effort to expel this "materies morbi" from the system; an undue formation of this compound favouring the occurrence of the disease; hence the connection between gout and uric acid calculous disease, and the influence of high living, want of exercise, &c., in inducing it. Thus also the hereditary nature of gout, and its frequent occurrence in low states of the system can be explained—facts which are generally regarded as militating against the humoral pathology of the affection. The above researches appear also to remove acute rheumatism from gout, and to render it probable that they are only analogous in affecting similar structures.

Dr. Williams expressed his gratification at the highly interesting and satisfactory results of Dr. Garrod's researches, which were the more important as establishing, on the basis of chemical demonstration, the true nature of gouty disease. It had long been a matter of high probability, that the ancient notion, that gout depends on a morbid matter in the blood, was correct; and many recent observations on the causes, symptoms, and sequelæ of the disease, had led to the legitimate inference, that this matter is lithic acid. This he (Dr. Williams) had learnt and taught for many years past. But the demonstrative proof,—the detection of this acid in the blood,—although often sought, had never been accomplished, and to Dr. Garrod was due the entire credit of having first achieved that desideratum. The deficiency of lithic acid in the urine in the commencement of a fit of the gout, in common with other febrile movements, had been noticed by Berzelius; and its abundant reappearance on the decline of the paroxysm had been a matter of common remark among practitioners. But Dr. Garrod's observation, that even when present in the blood, lithic acid is secreted in proportions varying from those of the other constituents of urine, was a fact interesting in a physiological as well as in a pathological point of view; although he (Dr. Williams) doubted that the explanation was such as the author suggested. He (Dr. Williams) thought that it would be taking too narrow a view of the origin of gout, to refer it to defective excretion only. Many facts had occurred to him which induced him to ascribe it also to imperfect assimilation, particularly of various proteinaceous nutriments of a low kind, (such as cheese, salted meat, and pastry,) which weak assimilative powers are unable to convert into blood, and which therefore decay into lower proximate elements. This corresponds with the experiments of Magendie, on the influence of azotised food in augmenting the animal matter in the urine; and Dr. Williams stated that he had in his own person experienced a proof in point, in finding some gouty symptoms invariably ensue after eating cheese for several days. On one other subject, Dr. Williams could not quite agree with the author,—that there is no pathological resemblance between gout and rheumatism. Practitioners generally acknowledge, that although in well-defined cases they are quite distinct, yet in others they appear to graduate into each other; and both in the copious deposits of lithic acid and its compounds, on the decline of acute rheumatism, and in the unquestionable power of colchicum and alkalies in the cure of the disease, he (Dr. Williams) found a resemblance to gout, not to be effaced by the failure to detect an augmented quantity of lithic acid in the blood. In many cases of acute rheumatism, the state of the urine plainly showed that lithic acid was excreted in abundance, and a continuance of Dr. Garrod's researches would probably discover in the blood in this disease, if not lithic acid, something akin to it, and ready to be converted into it.

Medical Gazette, Feb. 25, 1848, *p.* 337

8.—*On the Use of Phosphate of Ammonia in Gout and Rheumatism.*—By Dr. Edwards, Physician to the Bath Eastern Dispensary. —[Phosphate of ammonia, which appears to have been first recommended as a remedy in gout and rheumatism by Dr. Buckler of Baltimore, (See Retrospect, Vol. xiii. Art. 82), has never come into general use in this country. Dr. Edwards regards it as an exceedingly valuable medicine; and thinks that it acts beneficially in gout and rheumatism by decomposing the uric acid which is formed in excess in these diseases. He says:]

The phosphate of ammonia having been introduced into the system, meets with the uric acid, or urate of soda, and becomes decomposed; the phosphoric acid combines with the soda of the urate, forming a most soluble salt. It is thus seen that a most insoluble salt is exchanged for one as oppositely soluble. This, however, is not all the aid we get from it; for this new product, the phosphate of soda, according to the valuable researches of Baron Liebig, has a remarkable effect upon uric acid, inasmuch as he has shown that it has the power of rendering it soluble with facility in water. The before combined uric acid being set free, part unites with the ammonia of the phosphate, and the remainder is rendered very soluble at the high temperature of the body, through the agency of the formed phosphate of soda. Liebig states, "at a higher temperature, the phosphate of soda dissolves a larger amount of uric and hippuric acids than at a lower." The ammonia of this medicine is thus seen to serve a most important purpose in uniting with part of the uric acid, and forming a compound far more soluble than the acid itself, as it is a fact well established by Dr. Prout, that uric acid requires 10,000 parts of water at 60° for its solution, whereas the urate of ammonia dissolves in 480 times its weight of the same fluid, or, in other words, is more than twenty times as soluble. By these means, the free and combined uric acid existing in the system in these diseases will be dissolved and rendered capable of easy elimination by the kidneys, and the pains and other distressing symptoms occasioned, as Dr. Prout states, by the derangement going on in those "secondary assimilating processes" by which the nervous substance and immediate appendages, as also the fibrinous portion of the muscles are produced and maintained, will be shortly subdued, and by strict attention to the causes which give rise to that abundance of uric acid in the system, the disease will be altogether checked. If dyspepsia is prominent, and the digestive organs cannot assimilate the usual quantity of nitrogenized food which is introduced into them, it should be lowered, as likewise in those cases where too great a quantity is taken and assimilated, compared to that which the waste of the system requires. Again also, a frequent cause of this deposit exists in the arrest or diminution of the cutaneous excretion, whereby the kidneys act as compensating agents, and the system at large becomes impregnated with this nitrogenized excretion.

As I have previously stated, I have now used this remedy, and with great success, in almost every variety of gout and rheumatism. In acute articular rheumatism I have not exhibited it during its more inflammatory stage; but after this has been subdued somewhat by the usual antiphlogistic treatment, it very speedily relieves the pains, and in the majority of cases prevents fresh joints from being attacked. I cannot speak positively from sufficient data at present, but I am inclined to believe that the chronic form which is not unfrequently left behind from the acute, may often be obviated. I feel convinced I have prevented, by administering this salt prior to the coming on of the inflammatory symptoms, several times, attacks of gout and rheumatism, and this in individuals disposed to their invasion. In *chronic articular rheumatism*, I have used it after the bowels have been well cleansed by calomel or other purgatives, or if the constitution is vigorous, the vascular action strong, and heat high, after venesection, and I have got rid of these attacks much sooner than formerly. In muscular rheumatism, whether of the acute or chronic form, I have employed this remedy with greater success than in any other. After the action of the intestinal canal was somewhat regulated, I have generally been able, without further preface, to administer it in lumbago, pleurodynia, ischioglutcal rheumatism, epicranial, (cephalodynia,) cervical, (auchenodynia,) and facial rheumatism. In these I have seen it of particular service, and in one case of rheumatic ophthalmia, after the inflammatory symptoms had been reduced, and the patient was annoyed with the pains about the eye and brow, in which I administered it, it was attended with alleviation and subsidence of the pains within sixteen hours of being commenced. I am not prepared to assert that this salt will prove of benefit in those cases of chronic rheumatism, where the disease has already affected the cellular tissue, bone, or cartilage, and occasioned such appearances of morbid anatomy as have been described by Hasse. It may relieve, but I cannot believe it positively curative.

With respect to gout, my opportunities of applying this remedy have been less numerous than in rheumatism, yet numerous enough to enable me to speak with certainty of its great value as a remedy; when given in the doses I have mentioned, it produces but little sensible operation beyond that most important of all, the gradual (in two or three cases I have seen it act almost instantaneously,) diminution of the distressing symptoms. With this view I have always prefaced its use by well cleansing out the bowels with proper aperients, and then ordering the phosphate every eight hours in simple water, or occasionally in conjunction with a bitter infusion and spirits of nitre, the best infusion perhaps being that of the serpentaria, as it determines to the skin. Attention both before and during the administration of the phosphate to the due performance of the various functions connected with the primary assimilating processes is of great moment. A slight alterative aperient of mercurial pill and compound rhubarb pill, given every other night, twice or thrice, has answered well. I have seldom meddled with the inflamed part beyond ordering perfect rest, and exciting perspiration by means of fleecy hosiery or flannel, covered over with oil-silk, occasionally a light anodyne poultice or narcotic fomentation; and of course a consistent diet, and abstinence from everything irritating both of body and mind, were points duly remembered. In the third case in which I employed the salt, it was strikingly beneficial. A poor man, a dispensary patient, a very gouty subject, had had an attack for two or three weeks, being confined wholly to his bed or arm-chair. He had tried, and I had previously used, most of the most renowned remedies, with little or no relief. On a Wednesday afternoon he commenced taking the phosphate of ammonia, (ten grains every eight hours,) and on the Friday morning following he attended me at the dispensary, walking each way, and informed me he had lost all pain, and that the swelling and stiffness were rapidly subsiding. To use his own words, "the second dose of this last mixture had acted like a charm." On the Tuesday following he began his work again as a mason. I ordered his continuance for a short time of the salt, combining it with a bitter infusion, and the regular use of a mild aperient.

Provincial Medical and Surgical Journal, Nov. 17, 1847, *p.* 617.

9.—*Quinine in Acute Rheumatism.*—Most of our readers are probably aware, that among other remedies for rheumatic fever, sulphate of quinine has been recommended,* a mode of treatment contrasting strongly with that by profuse bleeding, or that by mercury, and yet one, it would appear, very successful. The quinine plan of treatment is followed by M. TROUSSEAU, of the Hôpital Necker. The following is from a clinical lecture:—In a case recently in that hospital,—one of rheumatic fever, with effusion into the knee-joint, but without any cardiac affection,—sulphate of quinine was administered, unpreceded by any other treatment. In four days a marked amelioration took place; from fifteen to thirty grains of the medicine being taken per day. In a few days more the patient was able to walk; all effusion and fever had disappeared. Here, then, was a rapid cure of rheumatic fever; however, that disease mostly lasts for two or three weeks. When it proceeds in its usual manner it may be combated in the same way as intermittent fever. If the quinine be suspended as soon as an evident benefit is produced, there is a danger of relapse, just as when that medicine has arrested an ague fit. The quinine must therefore be given every two, three, or four days, and continued after the pains have ceased. We must enter into the belief that rheumatism is not a local affection, and that an individual is not cured when the pains are stopped. Whilst the patient sweats, whilst his appetite does not return, and there is something wrong in his pulse, the rheumatic diathesis must be treated. When we employ bloodletting, we do not treat the rheumatism; we are only occupied with the diathesis by virtue of which the solids and liquids take on the rheumatic affection. When we make use of quina, we act upon the entire economy, on that particular condition of it known as the diathesis, whence come the pains and other phenomena presented by the joints. The diathesis may persist for two or three years after all manifestation of the disease has ceased, and we are obliged to act against this diathesis as we do in the case of the syphilitic or scrofulous. Such a persistence, or latency, is also seen in the marsh miasm, where a person having once been in an infected locality, may, at an interval of years, get an attack of ague, although in a district quite free from the visitations of that malady. Thus we see that a patient may be cured of all the outward symptoms of a disease, and yet the germs of that disease lurk, as it were, within him, ready to be developed, and to manifest themselves, whenever, from a concurrence of circumstances, they are kindled to a new life. So also, as in ague, the germs of a disease may be imbibed into the system, and lie hidden for a long period, but yet retain their power of being developed into evident disease. Such is also seen in the eruptive fevers, and we may suppose the same thing possible in other diseases.

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* See Retrospect, Vol. XV., p. 24.

Lancet, March 11, 1848, *p.* 288.

10.—*On the Use of Vinegar in Rheumatism.*—By J. C. Atkinson, Esq., Westminster.—[Mr. Atkinson says that common vinegar has been successfully used by him in various forms of arthritic, rheumatic, and even neuralgic maladies. He remarks,]

I was first led to employ this auxiliary comestible, if I may so term it, in cases where the alkaline treatment with colchicum had totally failed. Persons whose digestive organs were deficient in the assimilating process, arising from imperfect secretions, and producing foulness of breath and fœtid eructations, were much benefited by the administration of vinegar. Constant pains in the epigastric region after eating or drinking, no matter what, although ordinarily digestible, are likewise symptoms which indicate its adoption. One characteristic of its successful use is when all cloudiness of urine disappears. I may further observe, that it is rarely in the young that this remedy is required; those of middle age, whose constitutions have been injured by dissipation, will find great advantages from the use of the vinegar remedy after the colchico-alkali treatment has been proved of no utility.

The distilled vinegar, or dilute pyro-ligneous or pyro-acetic acid, may be administered in the following manner:—Acetic acid, one drachm; tincture of jalap, twenty minims; tincture of orange-peel, one drachm; camphor mixture, sufficient for a draught, to be taken twice or thrice a day.

The quantity of vinegar may be diminished or increased according to the feelings of the patient and the effect produced.

Lancet, Nov. 13, 1847, *p.* 529.

11.—*On the Uses of Cod-liver Oil.*—[According to the article from which we have taken the following extract, cod-liver oil appears to have been known to Perceval in 1771, as a remedy in chronic rheumatism; and known also to Michaelis a short time after. But it was Dr. Schenck who called the attention of the profession to this remedy, by the publication, in the year 1822, of a series of cases of chronic rheumatism successfully treated by him. For arthritis and scrofula, as well as for rheumatism, Dr. Schenck considered the oil as specific. Notwithstanding the publication of the experience of this gentleman and of many others, cod-liver oil, as our readers are aware, did not come into general use until a very few years ago. The author of the paper says—]

To establish some order in the enumeration of the long series of affections, for which the fish liver oil has been tried with more or less success, we copy from M. Jongh the following table.

Chronic rheumatism.—According to Alexander, Knood von Helmendstreit, Amelung, Brefeld, Basse, Fehr, Galcoma, Mall, Moeunig, Münzenthaler, Michaelis, &c., who have all published their own observations concerning the fish liver oil in chronic rheumatism, this medicine possesses such an efficacy in this disease that surpasses in their eyes all the other remedies, without excepting the most lauded anti-rheumatics.

This opinion of different doctors, who have all experimented by themselves, cannot be taxed with exaggeration, if it is considered that amongst these cases there are found numerous cases of rheumatic patients being cured, who, after many years of suffering, and usage of all sorts of remedies, having lost their strength and despairing of cure, were completely cured by the aid of the fish liver oil.

Rheumatic sciatica.—The fish liver oil did not prove less efficacious in this form of chronic rheumatism which is generally distinguished by its obstinacy; this is verified by the observations of MM. Knood von Helmendstreit, Rust, Amelung, Münzenthaler, Settenger, and Spitter.

Scrofulous diathesis.—Although there exist various observations in support of its excellence for certain severe forms of confirmed scrofula it requires something, candidly speaking, which will prove its efficacy in the scrofulous diatheses with certainty. The cause of this doubt ought not to be looked for in this circumstance, that the liver oil is less applicable in the scrofulous diathesis than in certain of the more severe forms of scrofula, but that the greater part of physicians are in the habit of only publishing their observations of the more severe cases. But if we consider that the scrofulous diathesis is the principle from which emanate, by the accession of aggravating circumstances, all the numerous and often dangerous forms of scrofula, and that the liver oil is in our eyes a true specific for the more severe forms of this affection, it is evident that this medicine is that which ought to counteract this principle with most certainty. Such is the opinion of M. Brefeld and Dr. Galama, who say that the liver oil is the most efficacious remedy for the scrofulous diathesis, and for no matter what form of confirmed scrofula.

Confirmed scrofula.—Amongst the facts relative to the use of the liver oil in some of manifold forms in which confirmed scrofula is presented, the most remarkable are those which Drs. Brefeld and Roppe have made known, the result of which is that this medicine universally is fit for all forms and kinds of scrofula. It is also nearly the unanimous opinion of all those who have employed the liver oil that it merits the first place among anti-scrofulous medicines.

[After adverting to the influence of the oil in cases of swelling of the lymphatic glands, scrofulous ulcers, and in the chronic exanthemata, the writer proceeds :—]

Rachitis.—The fish liver oil is, without exception, the best remedy for rachitis, in all its stages, and under whatever form it presents itself; such is the nearly unanimous opinion of the German and Dutch physicians, who affirm with one accord that it is much superior to any of the so-called anti-rachitic remedies. According to Dr. Schmidt, who has most insisted on the advantages of this medicine, in twenty-one rachitic patients which he had treated at the time when he made known his results, thirteen were cured, four were in process of being cured; as to the others, judging from the progress which they had made for the little time they were under treatment, a very favourable prognosis might be drawn.

General conclusions.—The chemical researches have taught us that the fish liver oil ought to be considered as a very compound medicine. Greasy neutral matter, bilious matter, iodine, phosphorus, each of them well-known as possessing great therapeutic efficacy; also a certain number of organic elements, such as butyric acid, gaduine, and some others, the medicinal action of which is less known; finally, various inorganic salts, as the phosphate and sulphate of lime, chloride of lime, phosphate and sulphate of magnesia, are the substances of which it is composed.

But it may be asked to which of these components does the oil owe its special virtues? Is it to the iodine, fatty matters, phosphorus, or other principles?

If it is considered that the diseases for which the liver oil is administered with success, it cannot escape any one that there are in each of them various indications to fulfil to obtain a complete cure. For the most part, there is debilitated digestion to be excited, nutrition to be regulated, secretions to be re-established, and the lymphatic system to be stimulated; while on the other hand, the modifying of the organic nervous system is presented as one of the most important indications to be fulfilled. Who does not know that neither the bilious matter, nor the fatty matter, nor the iodine, nor any other principle, whatever it may be, taken alone, is capable of satisfying at the same time all these indications, and that it is not to any of these substances in particular that the fish liver oil owes its medicinal properties, and the faculty of fulfilling so different and so numerous indications, but that it is by the union and co-operation of, if not all, at least the greater number of these substances?

In this state of things, the active principle of the fish liver oil cannot be discussed in particular, like the active principle of cinchona; but attention ought to be paid, if not to all, at least to the principal elements of the oil, as each of them, satisfying special indications which the diseases for which this medicine has been proved efficacious, present.

Quite in accordance with the fact that it is not one principle alone, but rather various particular elements which concur for the cure of rheumatism and scrofula, it appears likely that some of these principles particularly enjoy a more decided therapeutic effect. Therefore since the indications to be fulfilled for the cure of these diseases are not all of the same importance, it follows that the attention ought to be turned to the more active of these principles which fulfil the more important indications. In fine, if the results of the chemical researches and of other medical researches be compared, which is the object of this work, here is the result.

The medical researches having proved that the black fish liver oil is more efficacious in rheumatism and scrofula, than the other species, and the chemical researches having shown, on the other hand, differences, if not qualitative, at least quantitative, between the three kinds of oil examined, it follows that the principles that are in greater proportions in the black oil than in the other two kinds, ought to be considered as those which best fulfil the principal indications. Therefore it is not the neutral fatty matters, which are found in nearly equal quantities in the three species, nor the iodine, nor the phosphorus, nor the organic salts, which are found in greater quantity in the pale oils than in the black oil, which can be considered as more efficacious than the other principles for the cure of rheumatism and scrofula. It appears, then, that it is to the bilious matter and butyric acid, rather than the other principles, that the greater part of the therapeutic effect can be principally attributed, for they are the substances which are found in the greatest quantity in the variety of oil proved to be the most active.

As to the matter unknown up to this time, and which M. Jongh first proved the existence of, in the product of the analysis of the different species of Gadus, and to which he applied the name of Gaduine, it does not appear on account of its insolubility, at least in the condition in which it was examined, to have a right to be considered as an active principle of the fish liver oil.—*Gaz. Med. de Paris.*

Dublin Medical Press, Nov. 24, 1847, *p.* 325.

12.—CASE OF GENERAL ANASARCA TREATED BY DIGITALIS.

By Donald M'Donald, Esq., Tiverton.

[Mr. M'Donald's patient was a man inclined to corpulency, 57 years of age, and who had been ill about two years. The following is the account of the case:]

I found him in the following state:—Tumultuous action of the heart; frequent pulse; sense of weight and oppression in the region of the heart and epigastrium; dyspnœa at times very severe, amounting to orthopnœa; extreme difficulty (indeed an almost impossibility,) in mounting a hill; flatulence; frequent syncope; countenance with a distressed expression; anasarca general. The infiltration through the lower extremities was so great, that had not the remedies taken immediate effect, I should have had recourse to puncture on the morning of the 3rd day; bowels regular; urine very scanty, depositing a red sediment. The cause of the anasarca, (agreeably to the symptoms above given,) was disease of the heart and valves. Upon applying the stethoscope the following signs were revealed:—Murmur distinct to the right of the mesial line; distinct purring tremor. A *bruit de soufflet* attended the least exertion. In addition to these signs there was general venous congestion of the surface, more particularly the face, lips, neck, and hands. The jugular veins were much dilated and pulsating synchronously with the heart. My diagnosis was this:—Induration of the tricuspid and mitral valves, the latter to a less degree, and hypertrophy of the left ventricle. This state of things will therefore satisfactorily account for the supervention of anasarca. I will just mention that he had given himself up to die some days before consulting me, from having experienced no relief from several members of the profession, under whom he had consecutively placed himself, and from the firm conviction that he was rapidly sinking and far beyond all aid.

August 14th. As I mentioned above, this was my first day's attendance. I ordered him:—

℞. Pil. hydrarg., pulv. scillæ, utrq. gr. iv. M. Fiant pil. ij., hora somni sumendæ.

The liver being somewhat at fault, the above was prescribed to ensure a supply of proper bile.

℞. Tinct. digitalis, m. xv.; potassæ acetatis, dr. j.; sp. juniperi co., dr. ij.; decoct. scoparii co., dr. xiv. Fiat haustus bis quotidie sumendus. Animal broths twice a day. A little gin and water at night.

15th. Rept. pilulæ. Rept. haustus cum tinct. digitalis, m. xxv., bis quotidie. Diet, &c., as yesterday.

16th The patient this day stated that he felt better *already.* He said, to use his own expression, that he was not "so stiff."

[The quantity of digitalis was increased by five drops daily, until he was taking fifty minims twice a day.]

21st. Fully under the influence of the digitalis. Complains of headache, dimness of sight with muscæ volitantes, and feeling of syncope. Has passed during the night at least two quarts of urine; swelling nearly gone, scarcely any *pitting*; he is now able to fasten his shoes tightly. His clothes hang about him in bags to such an extent, that he is obliged for common comfort, to have them *much* drawn in. From his feeling so weak this day, I ordered him—

℞. Sp. ammon. arom., tinct. cinchonæ co., utrq., dr. j.; mist. camphoræ, dr. x. M. Fiat haustus quintis horis sumendus. Two glasses of wine and boiled mutton.

[In a few days more the effects of the digitalis had gone off, and the patient appeared quite well. Mr. M'Donald in commenting upon this case observes that the greatest use is derived from digitalis in anasarca "by gradually increasing the dose every day, (narrowly watching the patient at least three times in the twenty-four hours) and carrying it to the greatest possible extent,—i.e., until muscæ volitantes and the other symptoms of poisoning from the drug, *unequivocally* [his own italics] make their appearance." We cannot however agree with the author, that this mode of treatment is less depressing than the one by hydragogue cathartics.]

Provincial Medical and Surgical Journal, Nov. 17, 1847, *p.* 623.

13.—*On Buchu in Anasarca.*—[An anonymous writer in the Provincial Journal says:]

While from day to day new remedies are proposed, and are highly extolled for their virtues, at the same time many valuable ones formerly in use, and of equal, if not superior efficacy are altogether laid aside and forgotten.

In cases of general anasarca, consequent upon inflammatory affections, as well as those dependent upon organic disease, I have of late years found more unequivocal benefit to be derived from the use of the "Diosma crenata," than from any other single article of the Materia Medica. I have generally combined the fixed alkalies with it, and the form I prefer is—

℞. Infus. diosmæ, oz. vij.; sodæ bicarb., potassæ bicarb., potassæ nitratis, sing, scr. ij.; syr. aurant., dr. vj.; tinct scillæ. dr. ij. M.

That kind, the leaves of which are long and linear, is, I think, to be preferred to the other, the leaves of which are lanceolate, although both possess diuretic properties to a marked extent.

Provincial Medical and Surgical Journal, Nov., 3, 1847, *p.* 615.

[Mr. Hoskins, of Loughborough, relates the following case, which is confirmatory of the value of this medicine, which we perhaps do not appreciate. A woman, 47 years old, had ascites depending upon a disordered state of the liver, for which she took, after aperients, Pil. hydr. c. pul. scillæ et pul. digitalis, and iodide of potassium mixture. As, however, the symptoms seemed to be getting worse, Mr. Hoskins ordered her to continue the pills. To omit the former mixture and to take the following:—]

℞. Potassæ bicarbon., dr. j.; infusi buchu, oz. vj. M. Capt. cochl. ampla iij., quarta quaque hòra. To drink broom-tea, and to have an ointment of tartar emetic and iodide of potassium rubbed into the right side.

13th.—Symptoms alleviated; has passed more urine; slept better: thirst diminished; bowels confined.

To continue the medicines: to have an aperient draught containing one scruple of pulvis jalapæ comp.

17th.—Greatly improved; has passed large quantities of urine; the skin from being dry and harsh, has become cool and moist; tongue clean; no œdema of the legs and ankles, and decidedly less swelling of the abdomen; is able to lie down comfortably; sleeps much better; appetite improved.

To omit the blue pill and squill, and to have—℞. Pil. plummerii, gr. iv.; extr. hyoscyami, gr. v. M. Fiant pil. ij., hora somni omni nocte sumend. To continue the mixture.

19th.—From this time she began to amend rapidly. Has been latterly much purged, whether from the buchu or not I am unable to say; the evacuations the same as from the use of hydragogues; the kidneys have been powerfully acted upon, and she has continued to pass large quantities of urine. On the 24th there was no swelling of the abdomen whatever, and on the 26th she was so far convalescent as to be enabled to go into the country.

[Mr. Hoskins also used the buchu with an equally good effect in a case of anasarca following scarlatina.]

Provincial Medical and Surgical Journal, March 8, 1848, *p.* 120.

NERVOUS SYSTEM.

14.—ON THE THEORY OF CONVULSIVE DISEASES, ESPECIALLY EPILEPSY.

By Dr. Marshall Hall, F.R.S., &c.

[We give the following sketch of the theory of convulsive diseases from the pen of Dr. M. Hall, which we have perused with the greatest interest. "It is evident," says he, "that the whole subject of the diseases of the nervous system requires to be observed and studied anew."]

In treating of epilepsy, says Dr. Hall, I view it as only one of many forms of convulsive disease. No forms of convulsive diseases differ more from epilepsy than the different forms of epilepsy differ amongst themselves. The two terms may therefore be regarded as synonymous, or generic.

Epilepsy, in all its forms, is essentially convulsive—that is, the *first* link of causes and effects, in this disease, is of that character. Now, the accurate experiments of M. Flourens have finally established the great physiological and pathological principle, that no physical irritation of the cerebrum or cerebellum, or of the purely cerebral nerves, or indeed of *any* part of the nervous system, except the spinal marrow and the muscular nerves, *can* produce muscular action. To my own experiments and investigations we are indebted for the fact, that these effects of irritation of the spinal marrow may be induced or excited through certain incident excitor nerves, of which, indeed, *as such,* the idea did not previously exist in anatomy or physiology.

From all this it follows, that convulsion in general, and epilepsy in particular, must arise from *two* sets of causes—first, those which excite the spinal centre, comprising the medulla oblongata and medulla spinalis *immediately;* secondly, those which excitethis organ through the *medium* of its incident nerves.

The first of these causes may consist of *any* disease having its seat within the cranium or spinal canal, *so* that it may occasion irritation of the spinal centre. The second consists of *any* disorder or disease which may irritate any part of the class of incident nerves of the spinal system, whether situated in the mucous or serous membranes, or other tissues or organs.

This irritation of the spinal centre, mediately, through the incident nerves, or immediately, by the actual contact of the cause of irritation, constitutes the first link of the chain of causes and effects or symptoms in epilepsy, to which I have adverted. The second link in that chain is the convulsive contraction of a certain class or system of muscles. This system of muscles is as *special* as that of the muscles of inspiration or of deglutition, excited into action by an excitant of these several functions. In epilepsy, it is certain muscles of the neck (and perhaps I may specify the platysma myoides) which are so affected. The immediate consequence of this, and the *third* link in our chain, is a compression of the jugular and other large veins of this important region, with congestion of the venous roots and capillary canals which lead to them, and of the cerebrum and other organs in which these are seated or take their origin.

Thus, as the first symptom of tetanus is a spasmodic affection of certain muscles of the posterior part of the neck and of the inferior maxilla, so the first symptom of epilepsy consists in a spasmodic action of muscles, occupying, principally,—perhaps not entirely, —the anterior part of the neck, usually denominated the throat, speedily or immediately followed by a similar affection of the muscles which close the larynx, inducing the symptom which I shall designate laryngismus—so *analogous* are these two diseases of the spinal system.

The state of things arising from compression of the jugular veins (principally), I beg to designate by the term *sphagiasmus.*

From this first symptom, when unfollowed by laryngismus, that form of epilepsy which may, from being apparently limited to cerebral symptoms, be designated cerebral epilepsy, arises. It is, then, the *petit mal* of the French. It is the first or cerebral part of that form of epilepsy, which, conjoining or superadding laryngismus or other violent convulsive affections, is the *haut mal* of the same authors. In the former there is, or may be, every cerebral symptom, as in this latter there is every spinal affection, however terrific.

Laryngismus may be either a partial closure of the larynx, and therefore stridulus, or the closure may be complete. In the latter it leads to general distortion and convulsion of the eyes, face, and general frame.

As a part of the epileptic seizure, of the most pathognomonic character, I must briefly notice another symptom, in this rapid enumeration of causes and effects in this malady: it is the *odaxismus,* or bitten tongue, lip, or cheek, a term already in use in the older writers.

Next in the general order of convulsion—of the eyes, face, and limbs, and next, the affections of the expulsors and sphincters.

Having given this preliminary sketch of the causes and pathology of epilepsy, I proceed to details. I beg first to observe, that this dire disease, with its congeneric affections, is but the anatomy and physiology of the spinal system, such as I have established it, converted into pathology and therapeutics, by which last term I mean, not the empirical cure, but the just and rational treatment of disease.

At the uppermost and lowest part of the spinal marrow, there are, as I have said, two spinal centres of the reflex spinal system, the medulla oblongata and its analogue. The first presides over the larynx, the pharynx, the muscles of respiration; the second, over the uterus, the expulsors, the sphincters.

These views do not apply to epilepsy alone, but to the class of convulsive diseases.

Diseases of the reflex spinal system are found to involve and affect these organs and their functions, in a manner equally special and peculiar.

The knowledge of the anatomy and physiology of the system is the diagnosis, and our guide to the pathology and treatment of this class of diseases.

In all these diseases, the larynx, the pharynx, the respiration, the uterus, the sphincters—the organs, in a word, of ingestion and of egestion, of exclusion, of retention, are affected in a manner which is special and diagnostic.

But, of all these organs, the larynx, as it is the most immediately vital, so its affections, its partial or complete closure, are attended with the most terrific consequences. The anatomy—the nervous and muscular relations; the physiology—the various reflex arcs and modes of action, of the larnyx, constitute one of the most interesting subjects of inquiry for the physician; for, on a thousand occasions, this anatomy, this physiology, are his guides in practice, enabling him, as I have said, to form his diagnosis, teaching the pathology, and suggesting the proper treatment.

All this will be obvious from the details given in the following brief essay. It will be still more so as I point out the condition of the larynx and of the tongue, the laryngismus and the odaxismus, in epilepsy; of the larynx in hydrophobia; and of the pharynx in tetanus: and as I trace the effects of emotion and of hysteria, of certain destructive agents, as strangulation, strychnine, &c., on the same organs.

The resemblance between epilepsy and strangulation I have pointed out elsewhere. Besides the condition of the veins and larynx, that of the ejaculators, expulsors, and sphincters, is similar in both these cases.

The causes.—It was impossible to conceive any just idea of the causes of epilepsy, and of their modes of action, until we possessed a just view of the excito-motor system of nerves, and their functions. There existed vague notions, indeed, relative to idiopathic and symptomatic epilepsy; but there could be no distinct and accurate views of the excited, direct, and reflex, modes of action of its various causes, and of the relations of these to pathology.

The causes of the epileptic seizure may be divided into those which consist in—

1. Gastric, enteric, and uterine, and probably, urinary, irritation; this form of epilepsy is *reflex.*
2. Irritation of the membranes within the cranium, and, perhaps, of some other cavities, as the pericardium; this form of epilepsy is also *reflex.*
3. Irritation of the medulla oblongata, in diseases seated within the cranium; this form of epilepsy is *direct.*
4. Shocks to the nervous system, and especially to the medulla oblongata, from great emotion, as fright, from violent efforts, from sexual excesses, &c.; this form of epilepsy is also *direct.*
5. Sleep, in which there is, normally, a degree of sphagiasmus; and—
6. Causes of augmented and undue excitability of the spinal system, as that left by previous seizures, emotion, sexual excesses, interrupted sleep, &c.
7. I ought also to allude to certain perturbations of the system, as causes of the epileptic seizures, such as is observed in the first stage of variola.
8. It is also to be observed, that exhaustion from loss of blood is a cause of epileptic convulsion, especially in the erect position.
9. Epileptic seizures, also, frequently attend albuminuria and diabetes.

[But whatever may be the exciting cause of epilepsy, the first symptom of the seizure is that of compression of the veins of the neck,—sphagiasmus as the author calls it.]

1. *Of sphagiasmus, and consequent cerebral epilepsy.* Whatever the *cause* of epilepsy may be, sphagiasmus appears to be the first obvious effect or symptom. From this symptom, which must be viewed in its double aspect of contraction of certain muscles of the neck, and of compression of the veins of the neck, all that is purely cerebral in epilepsy immediately arises; affections of the senses—the eye, the ear, the senses of smell and taste, and of the touch; affections of the intellect, &c.,—thus, before the eyes there are flashes of light, flocci volitantes, or mist; in the ears there are various noises, as of a cataract, or of machinery, or of musketry; there is the smell or taste of musk or of fæces; and the sense of touch is affected by the well-known aura epileptica. In regard to the intellect, we have the "oblivium" and the "delirium breve," so beautifully described by Heberden, with various affections of the sleep, the memory, &c.

All that depends on sphagiasmus, *all* that falls short of laryngismus, may be viewed, in general terms, as cerebral epilepsy; whilst all that is beyond this term is violent convulsion, with its further still more fearful consequences in congestion of the cerebrum, of the cerebellum, and doubtless also of the medulla oblongata.

[The cause of sphagiasmus is unknown; but Dr. Hall offers a suggestion upon the subject. He says:]

I may be allowed to *suggest*, perhaps, that as the orbicularis closes the eyelid when the influence of volition is removed from the levator palpebræ, so the platysma myoides may compress the jugulars either when volition is removed, as in sleep, or when it is itself excited to spasmodic contraction. But it is to the effect on the jugular veins, however produced, which is indubitable and so important in the theory of convulsive diseases, and to which I have assigned the designation of sphagiasmus, that I beg, in the most especial manner, to draw the attention of the profession.

[The physiological action of the platysma myoides occurs, according to Dr. Hall, upon two occasions, in producing sleep, and in causing that condition of the capillary vessels of the face known as blushing, or flushing. Dr. Hall proceeds to speak—]

2. *Of laryngismus and spinal epilepsy.*—All is changed if, to sphagiasmus, the compression of the veins of the neck, and the consequent congestion of the cerebrum, and the series of cerebral affections which I have described, laryngismus, and especially extreme laryngismus, or complete closure of the larynx, with the suffocation of Aretæus, supervenes. Terrific convulsions follow: there is odaxismus—the tongue being thrust out of the mouth, and bitten more or less violently by the convulsive approximation of the teeth, or the lip or cheek is drawn inwards, and bitten by a similar muscular action; whilst every other form of convulsive affection occurs, with the appearance of tenfold congestion of the eyes, face, and neck, and doubtless of the organs contained within the cranial cavity and upper part of the spinal canal. The eyelids and face are sometimes marked by distinct ecchymoses, the effect of this violent congestion.

We observe, once more, a series of convulsive affections, now of the *direct* character, attended or followed by a still greater and more dire affection of the encephalon.

The convulsions are seen in frightful distortion of the eyes, face, neck, limbs, and general frame: there are sphagiasmus and laryngismus, with the appearances of strangulation; there are foaming at the mouth, protrusion of the tongue, violent closure of the maxillæ, the foam being frequently bloody, the tongue severely wounded, the teeth gnashed together: meanwhile there may be expulsion of the urine, semen, or fæces.

Sometimes the convulsion draws the eyes, head, neck, and general frame to one side, affecting the hand and foot of that side more than the other; and sometimes those limbs are left feeble and slightly contracted or paralytic, and the patient appears hemiplegic.

More constantly the state of congestion of the encephalon is attended by deep and lasting coma, or followed by a paroxysm of mania; and after repeated attacks the memory and the intellect may fail.

[Tendency of blood to the head is a thing often talked about, but little understood. The following is Dr. Hall's opinion:]

The phrase, "the undue tendency of blood," is an erroneous one, originating in a false hypothesis, and leading to false conclusions. The word congestion, or impeded return, should be substituted for the term tendency; and the cause must be sought in excitants of spinal action, and in the condition of the veins of the neck, and not in the heart and arteries. It is this topical congestion, and not mere general plethora, that is the object of our study; for it may co-exist with a state of anæmia of the general system.

The real and immediate cause of this condition of the circulation within the head, is sphagiasmus, or obstructed state of the circulation in the jugular and other veins of the neck.

The most prompt remedy, in many circumstances, is the induction of vomiting, either by an effectual dose of ipecacuan, or by irritation of the fauces—a measure of far greater value, in *many* points of view, than is generally supposed.

In the "tendency of blood to the head," or rather, in its congestion there, the evacuation of the stomach and intestines, and bloodletting, general and topical, are the important remedies, the cause and its effects being equally treated.

[Any of the symptoms of epilepsy above described, sphagiasmus, laryngismus, odaxismus even, may be absent; and mixed cases occur in which one or other of these symptoms exist in very varying degrees. This leads us to Dr. Hall's account of the diagnosis. He says:]

When laryngismus, and especially when odaxismus occurs, there can be no doubt that the case is epileptic. This last is *the* most pathognomic symptom of this dire malady.

The great distinction between any form of hysteria and epilepsy, consists in the *absence*, in the former, of these three symptoms —sphagiasmus, laryngismus, and odaxismus,—and of the consequent absence of cerebral congestion, and of real convulsion. In hysteria, there are, indeed, some forms of laryngismus, especially the stridulous, denoted by loss of voice, or strange croupy inspirations or cough, as there are struggles and various violent movements of the body and limbs; but a very little attention and experience will enable us to distinguish these affections from the epileptic laryngismus and from real convulsion.

It is this absence of sphagiasmus which prevents the accession of real insensibility in the hysteric attack; it is the absence of laryngismus which prevents the accession of real convulsion.

In epilepsy, sphagiasmus is, as I have said, usually the very first symptom; all that follows is, therefore, however frightful to behold, unattended by suffering in the patient. Even laryngismus, so terrific to the hydrophobic patient, is unfelt in the epileptic.

But cases do occur in which the patient is conscious of the impending attack—that is, sphagiasmus is either absent or exists in too mild a form to induce insensibility; there are cerebral or laryngeal symptoms which strike the patient with horror or terror.

As the sphagiasmus, so the laryngismus may be imperfect; in the latter case, the attack is attended by various noises, sometimes assuming the character of shrieks, sometimes of the crowing inspiration.

In like manner odaxismus is frequently absent.

Epilepsy may, indeed, however formidable in its essence, assume the form of the mildest or of the most dire of human maladies. It might be interesting to trace the various classical allusions to this disease as being portentous of the anger of the gods, or of national calamities; but such an episode would detain us too long on this occasion.

It is interesting to observe, that whilst the series of symptoms in epilepsy is such as has been described—whilst, in hydrophobia, the patient is subjected to a fearful suffocative paroxysm of laryngismus, without sphagiasmus and its attendant insensibility,—in tetanus we witness neither of these symptoms: the maxillæ are affected with trismus, and the neck is variously affected by tetanic spasms, but the jugular veins are not compressed, nor is the larynx closed: the action of the pharynx is, however, frequently involved in this disease. In chorea, and in the paralysis agitans, the jugular veins, the larynx, and the pharynx, all escape: it is, apparently, the system of purely voluntary muscles which are affected; and this affection is not precisely convulsive or spasmodic; the muscles of the articulations, of the neck, the hands and arms, and eventually of the rest of the body, are agitated, the acts of volition being perverted and thwarted, as it were, by emotion and the excito-motor power; so peculiar and distinct are the several diseases of this class, when viewed by the light of physiology!

Similar as epilepsy may appear to the convulsions of children, there are some points of difference which deserve to be noticed. In the latter, whilst odaxismus is scarcely known, and incomplete laryngismus is common, the affections of the hands and feet are pathognomonic, whilst sudden dissolution, on the one hand, and recovery, on the other, are more frequent than in epilepsy.

On sphagiasmus specially.—Even the unprofessional bystander hastens to loosen the cravat and collar of the patient seized with epilepsy, so obviously is he affected with the usual signs and appearances of strangulation. Aretæus compares the epileptic patient to the strangled bull, or to the animal round the neck of which a cord has been tightened.

In both these cases, that condition of the jugular vein is induced which I have designated sphagiasmus; and it is of no little interest to observe how similar, in many respects, the two cases prove to be.

In both there are compressed veins of the neck; in both there are congestion of the cerebrum, with instant insensibility; in both there is protrusion, tumidity, and lividity of the tongue; in both there are convulsions; in both there may be erection of the penis, with expulsion of the semen.

Epilepsy is strangulation, and strangulation is epilepsy; and as the nature, so the treatment of the two cases must be similar.

I need not pursue this parallel further. It is obvious that the two cases throw a ray of light on each other.

[In the *treatment* of epilepsy, we must relieve all gastric, enteric, and uterine irritations, by emetics, enemata, and vaginal injections of warm water: the patient must be prevented from sleeping too deeply, and from being too suddenly disturbed. All mental and bodily excitement must be avoided. Simple and nutritious diet, regulation of the bowels and kidneys, cold sponging and friction, fresh air and exercise, are of more avail in the treatment of epilepsy, than any specific that might be named. If an attack is threatened, the patient must be narrowly watched, and cold water dashed in his face when the paroxysm seems approaching: and if the fit actually takes place, Dr. Hall says—]

The next point which demands attention is the state of sphagiasmus. The head should be raised, the neck should be exposed, forced deep inspirations should be drawn voluntarily if the patient retains his sensibility, or should be excited by dashing cold water on the face if insensibility have supervened, in order that the veins may be relieved, and the larynx opened.

The rest of the treatment at this period of the seizure consists in free exposure of the face and neck to the open air, or a current of air, and the application of a cold spirit lotion to the head, and of fomentations to the feet; and if there be convulsion, in guarding the patient against accident or injury.

Lancet, Oct. 30, 1817, *p.* 460.

[In another paper published in the Lancet, March 18, 1848, the reader will find further remarks by this eminent physiologist on the subject of *Spasmo-paralysis.* We subjoin some of the most interesting, and refer the reader to the Lancet for further details.]

Paralysis may depend on the exclusion of the influence either of the cerebrum, or of the spinal marrow,—that is, of both cerebrum and spinal marrow. Spasm can only arise from irritation of some part of the *spinal* system; but this irritation may affect the incident excitor nerves, the spinal centre, or the muscular nerves. Spasmo-paralysis is a term which I have adopted to express the varied combinations of spasm and paralysis which occur so frequently in practice.

How interesting and how valuable would be a series of accurate cases and *post-mortem* examinations of the various congenital spasmodic and spasmo-paralytic affections! of cheirismus, and especially of podrismus, in the varied forms, or rather deformities, of club-foot.

Is the cause of this calamity always of centric origin? or is it sometimes the reflex action of external cold, injury, &c.?

The class of intra-uterine diseases still requires renewed investigation, and no part of it more than affections of the nervous system.

Effusion over the hemispheres, and at the base of the encephalon, and along the spinal canal, is too frequently the cause of irritation—pressure or counter-pressure—on the spinal system, that division of the nervous system endowed with the excito-motor power. This irritation is the source of various congenital convulsive or spasmodic affections; it may be the cause of strabismus, laryngismus, &c., of the various distortions of the hands, and especially of the feet. In the case of two brothers, similarly affected, the tendo-Achillis was permanently contracted with spasmo-paralysis of both legs; on the death of one aged 12, effusion on the cerebral hemispheres, at the base of the brain, and along the spinal canal, was found in considerable quantity; the arachnoid was thickened, and, over the lateral portion of one hemisphere, converted into a thin layer of bone.

Of Spasmo-paralysis in Infants and Children.—Spasmo-paralysis in infants and children is of centric and of ex-centric origin—the prognosis of the former being, of course, far more formidable than that of the latter.

Teething, and gastric and intestinal irritation, and, I *suspect*, exposure of the naked surface to the cold, are the causes of the reflex or ex-centric forms of this malady. From such causes I have seen hemiplegia of the arm, or of the leg, or of both; and the proof that the affection *was* of reflex origin was a very happy one—viz., speedy recovery.

The event, however, is not always so fortunate.

Sometimes both legs are affected, and this affection is sometimes more observed in one leg than in the other; sometimes the spasm, sometimes the paralysis, predominates; and sometimes one leg is affected with paralysis, whilst the other is affected with spasmo-paralysis.

Spasmo-paralysis in the Adult.—But of all the cases which have come under my observation, none has been more replete with interest and anxiety than spasmo-paralysis occurring in the adult period of human life.

It is well known that the epileptic convulsion sometimes leaves one arm, one leg, or one side, paralytic or hemiplegic, in a greater or less degree. If the seizures were not to be repeated, I imagine this paralysis would frequently subside, being the effect of shock, and of the common cause or causes of the convulsion, and of the hemiplegia, which is therefore not permanent. But if the shock be repeated, the paralysis may be permanent, although the convulsion subsides.

In one most interesting case, a lady, aged thirty-five, was seized with violent convulsion of the left side of the face, and of the left arm, the leg being unaffected; when the convulsion ceased, the face and arm were left extremely, if not perfectly paralytic. A degree of amendment took place; but the convulsions returned, occupying the same seats as before, and, on ceasing, again left the face, arm, and hand, absolutely paralytic.

This lady had once had phlegmasia dolens after parturition, and this leg again became swollen. But the cause of the attack of convulsions seemed to be discovered in the condition of the intestines; for these convulsions were relieved by purgative medicines, but were excited if those medicines acted too violently.

From the paralysis left by this serious attack or repetition of attacks, the patient recovered completely,—an additional proof that the affection had, like many cases of epileptic seizure, arisen from some cause ex-centric to the encephalon or spinal marrow. And how invaluable is this fact, in reference both to our prognosis and treatment!

Indeed, I may here observe, that spasmo-paralysis is in every respect a disease of less hopeless character than pure paralysis, inasmuch as the irritation of an organ is a less severe affection than its destruction. The diagnosis or detection of the cause is the first great object of the physician, and especially the determination of the question—Whether that cause be seated centrically or ex-centrically.

In one case, which occurred in a member of our own profession, after repeated threatenings supposed to be apoplectic, severe spasmo-paralysis supervened, and remained permanent. Bleeding had been resorted to constantly as *the* preventive. It ought, I believe, to have been decided, but not too severe, antacid aperients, with a strict attention to the diet, which should not have been of a mere vegetable, but of a light and digestible character.

There was, I believe, more of the epileptic than of the apoplectic in those threatenings. Is there any physical lesion? Is the case, or was the case, one admitting of recovery? How deeply interesting are all these questions!

It is plain that the new topic—new because now viewed distinctly—of spasmo-paralysis, will assume an important position amongst the objects of the physician's studies.

I have two patients under my care, at this time, with podrismus, occurring at the ages, in one, of twenty-five, in the other, of forty-five. Both are females. In the first, the right foot is drawn upwards and inwards, and so severely as to induce great tenderness and swelling of the outer ankle. Various symptoms of nervous origin are conjoined with this deformity of the foot. In the other, the tendo-Achillis in each leg is tense, and the toe only, and not the foot, much less the heel, can be put to the ground. In this case almost every article of food or medicine is rejected by vomiting.

I do not believe that either of these cases is hysteria. There is no other symptom of hysteric character, and the temperament in both patients is staid and sedate.

Conclusion.—From the recent progress of the physiology of the nervous system, we are now enabled to conclude—

1. That *paralysis*, pure paralysis, *may* be an affection either of the cerebrum, the spinal marrow, or the nerves; but

2. That *spasm must* be an affection of some part of the true spinal system; and

3. That spasmo-paralysis must at least involve in it an affection of the true spinal system, either primarily or secondarily.

There is only one exception to this last rule: it is the case of severe hemiplegia, in which, from the mere facts of the severing of the influence of volition, and the normal or physiological action of the spinal marrow—the source at once of the irritability of muscular fibre and of tone—the affected hand frequently becomes spasmodically flexed.

Here I conclude this brief paper. I think I have clearly shown in it, once more, how important, how essential, physiology is to the physician, and pointed out a distinction to be carefully drawn between paralysis, and spasm, and spasmo-paralysis, as at once a guide to our prognosis and our treatment.

Lancet, March 18, 1848, *p*. 307.

15.—ON THE IRRITABILITY OF PARALYSED MUSCLES.

By Dr. Marshall Hall, F.R.S., &c.

[The conclusions arrived at upon this subject by Dr. M. Hall and Dr. Todd, being opposed to each other, Dr. Hall endeavours to show in the present paper, read before the Medico-Chirurgical Society, that the discrepancy was owing to the use of different apparatus in the experiments.]

Dr. Hall chose the Cruickshank battery or trough, which produces a simple current of low intensity—this is really a test of the irritability of the muscular fibre. Dr. Todd employed the electro-dynamic, or electro-magnetic apparatus, which produces currents of great intensity, rapidly interrupted, repeated, and even alternated: this displays the power of the muscular mass. The effects of instruments so different could not be the same; and the results of experiments prove that they are diametrically opposite. In a case of hemiplegia of three years and a quarter's duration, Dr. Hall, with Mr. H. Smith, first applied the current from Cruickshank's battery: on using a small number of plates, the muscles of the paralysed arm were slightly affected, those of the sound arm not at all. On augmenting the number of plates both arms were moved, but the paralytic arm more than the other. On substituting Hearder's electro-dynamic apparatus for Cruickshank's battery, both arms were moved, but the sound arm more than the paralysed one; and this difference became still more obvious as the power of the apparatus was increased. After defining the terms used in his paper, and making some remarks on the different causes of the spasm, which is in some cases combined with paralysis, Dr. Hall proposes the following questions, affirmative answers to which would, in fact, embody the conclusions arrived at in his paper:—1. Are those cases of paralysis in which the irritability of the muscular fibre is greater in the paralysed than in the unaffected part or limb? 2. Are those cases of paralysis in which the reverse of this obtains? 3. What are those cases severally and respectively? Are the former cases in which the influence of the cerebrum alone is severed? And are the latter cases in which the influence of the spinal marrow is intercepted? 4. Is the galvanic battery or trough, cautiously employed, a fair test of the irritability of the muscular fibre in paralytic limbs, and, consequently, diagnostic of the two kinds of paralysis? In the prosecution of these questions many precautions are requisite. 1. The effect of surprise and of sudden sensation in wincing, starting, &c. must be distinguished from that of the galvanic influence. 2. The degree of the galvanic force should never be such as to give pain. 3. The first effect of the paralytic seizure is one of shock, probably of diminished irritability of the muscular fibre. Time must be allowed for the restoration and augmentation of this property. 4. The recovery from the shock, evinced by rapid increase of voluntary power during the first few days, must be distinguished from the slower recovery from the actual disease. 5. In some cases there is no recovery. In these cases it is probable there may be no augmentation, perhaps no restoration of the irritability. After these preliminary remarks, the author proceeds to the detail of a series of new experiments and observations made since the publication of Dr. Todd's paper. Case 1 was one of paralysis of the right side of the face, supposed to be paralysis of the facial nerve. The application of Cruickshank's battery caused movements only in the affected side of the face. Further inquiry into the history of the case showed that this was really a case of cerebral paralysis, and not of mere paralysis of facial nerve, as had been believed until the galvanic test corrected the diagnosis. Case 2 was one of paralysis of the left side of the face, really depending on affection of the facial nerve. On applying galvanism, the muscles of the unparalysed side were alone excited, or most excited to contraction, according to the number of plates employed. In Case 3, one of hemiplegia, the right or paralytic hand and arm were distinctly moved by a number of plates which did not affect the left, and much more than the left by a number of plates which affected both. The effects were the same when the direction of the current was reversed. In Case 4, also one of hemiplegia from cerebral disease, by the influence of Cruickshank's trough with fifteen plates, the left or affected hand was slightly moved, when no movement was observed in the right. With twenty or twenty-five plates movements were produced in both, but far more in the left than in the right. When Hearder's electro-dynamic apparatus was tried, the effects were reversed, being more strongly marked in the sound than in the paralysed limb. Case 5, like Case 1, displayed the galvanic influence as a corrector of a hasty and an erroneous diagnosis. It was a case of paralysis of the left leg, and was supposed to be an instance of spinal paralysis. It was expected, therefore, that the muscles of the paralytic limb would be least affected by galvanism. On the contrary, they were alone, or most moved. But with Hearder's apparatus the muscles of the unaffected limb were moved, or permanently contracted, when scarcely a movement was observed in the unhealthy limb. The author observes, that no more glaring example can be given than this:—first, of muscles of paralytic limbs with augmented irritability of fibre; second, of the diagnostic power of the galvanic trough; third, of the wide difference between the effects of this apparatus and of the electro-dynamic machine. The author concludes by a few remarks on some suggestions as to other possible modes of explaining the phenomena which have been detailed. It had been supposed that the sound limbs are restrained from moving by the volition of the patient; but the author observes that in the face such an influence of volition would be evinced by distortion of the features, which is not the case; and that volition may be suspended by causing the patient to let his hands hang down loosely. It had also been suggested that the movement of the hemiplegic muscles might be the result of a reflex action. But the author points out that the movements excited by galvanism may be limited to a single muscle—do not affect groups of muscles, and are totally different in character from reflex movements; and he relates the following experiment as negativing the idea of reflex action being concerned in the phenomena. In a decapitated frog, the nerves of one leg were divided, or as far as possible removed. The two legs were then subjected to the same galvanic influence. In one there might, but in the other there could not be a reflex action; yet, the irritability being alike, both were moved equally.

[Dr. Baly did not think that Dr. Hall had proved that the muscular irritability was increased in these cases: he thought that the reflex actions were more readily induced on account of the parts being withdrawn from the restraining influence of the mind.

Dr. Todd also thought Dr. Hall's experiments inconclusive. He offered the following explanation of the phenomena they presented:]

We often meet with cases of hemiplegia, in which the paralytic leg evinces vigorous and energetic reflex actions to slight stimuli—such as the most gentle application of a feather along the sole of the foot, causing a slight titillation of the surface; but if a more violent stimulus be applied—such as a strong pinch of the skin—no actions, or very slight ones, will be produced. It is possible, then, that in these cases of Dr. Marshall Hall's a reflex action may be produced in the paralytic limb by the slight stimulus, which, as Dr. Baly ingeniously suggests, is prevented from taking place in the sound limb by the controlling energy of the will. This is the only explanation which occurs to me at present of cases of this description where the stimulus is so slight. I doubt much that the feeble galvanic current used by Dr. Hall can penetrate to the muscles through the skin, which we know is a very bad conductor. It probably goes no farther than the cutaneous nerves, which it stimulates, and through which it provokes reflex actions. This idea receives some confirmation from the fact that the direction of the current occasioned no material difference in the force of the contractions. Now, in some experiments which I have lately tried, and the results of which I hope at some future day to lay before the Society, I have found that when the current is sufficiently strong to penetrate to the nerves and muscles, the direction of the current exercises a decided influence upon the amount of contractions, the direct current, or that which passes from centre to circumference, causing the greatest amount of contraction. This is in accordance with the results of Matteucci's experiments, which are no doubt well known to the Fellows of the Society; and I may add, that it affords the most important confirmation to the views I have put forward in the paper published in the last volume of the Society's *Transactions*—namely, that the galvanic current acts primarily upon the nerves of the limbs, and only secondarily, through the excitation of the nervous force in the nerves, upon the muscles. If the current acted primarily upon the muscles, it would be indifferent whether the current passed in one direction or in the other.

[Dr. Hall in reply stated that he still maintained his opinions. He said that,]

The irritability of the muscular fibre in paralytic limbs is augmented in cerebral, and diminished in spinal paralysis; that volition is the exhauster, the spinal marrow the source and restorer, of that irritability; that to test the irritability proves a diagnosis of great importance in many obscure cases; and that Cruickshank's trough, but *not* the electro-dynamic or the magneto-electric apparatus, *is* a TEST of that irritability, *is*, therefore, a diagnostic between cerebral and spinal paralysis.

[Dr. GOLDING BIRD thought that the difference in the results of Dr. Hall and Dr. Todd's experiments was due to a difference in the *tension* of the electricity employed. He said,]

The fact was, that the two physiologists used the same agent in two forms so totally distinct in their action on the molecular arrangement of bodies, that it might almost be said that two different agents had been employed. Dr. M. Hall used electricity of feeble, Dr. Todd electricity of high tension. The former employed continuous currents passing in one direction; the latter, interrupted currents, alternating in direction. Hence the experiments were in nowise comparable. Both gentlemen were undoubtedly correct in their statements, and there was not the slightest reason for attributing misinterpretation of the observed phenomena to either. Every one was familiar with the influence of tension in modifying the effects of electricity, especially in relation to its molecular action; and there is little difficulty, by calling to mind a few well recognized facts, in understanding how materially this circumstance will modify the results of physiological researches. If some gunpowder were placed on the ballot-box on the table, and the charge of an electric jar passed through it, we should observe the vivid flash and loud snap; but the gunpowder, combustible as it is, would not be influenced. It would be simply scattered over the table—for the electric discharge would rush through it too rapidly to allow time for its combustion. But let the experiment be repeated, with the simple difference of lessening the tension of the electricity, by allowing it to pass through a few feet of wet string, then the vivid flash and report will be exchanged for a feeble light and a hissing noise, but the powder will burst into flame. Again, the discharge of electricity of high tension through an heliacal coil of wire induces a far feebler amount of magnetism in an included bar of iron than is excited by the passage through the same coil of a much weaker current, of low tension. The influence of very feeble currents on molecules of matter was not so contemptible as had been stated to-night. Dr. Golding Bird firmly believed that such currents alone were competent to give information regarding the effects of electricity on matter: it must not be forgotten, that currents of high tension would traverse a fluid conductor as an electrolyte, without, so far as is known, affecting it, at least to any important extent; whilst a feeble current appeared only capable of traversing it by making its way from atom to atom, really polarizing its molecular arrangement, as has been lately beautifully shown in the researches of that illustrious philosopher, Dr. Faraday. To apply the results of this reasoning to the *quæstio vexata* before the Society, there could be but little doubt, on the minds of any thinking persons, that a current of high tension would rush through the limb of a patient as through any other conductor, scarcely influencing its minute structure, whilst one of feeble electricity would make its way from molecule to molecule of muscle or nerve, developing, in the most evident manner, any influence it is capable of producing. In all researches of this kind, the electricity should never be sufficient to excite anything approaching to pain in the sound limb, for this would vitiate all results. Dr. Todd's objection to feeble currents, on the plea of their not penetrating the skin, is evidently not tenable for a moment, for if too weak to pass through the thickness of the skin, they could hardly traverse along its surface the whole length of a limb, as assumed by him. It is, besides, notorious that a current from a single pair of plates will readily pass through a solid mass of wet plaster of Paris, as shown in the experiments of Becquerel, as well as in some recorded by Dr. Golding Bird in the pages of the *Transactions* of the Royal Society. In conclusion, Dr. Golding Bird observed that, as he had the misfortune to differ from Dr. M. Hall, respecting the value of the researches detailed by him to the Royal Society, and to which allusion had this evening been made, he felt bound, from a sense of justice to the indefatigable author of the paper, to declare his conviction that, so far as his own observations had extended, they completely corroborated the views of Dr. M. Hall. He believed that, whenever the influence of the brain was removed, a palsied limb would always evince greater susceptibility to a feeble electric current, than the unaffected one.

Medical Gazette, Aprll 7, 1848, p. 599.

[Connected with this interesting subject we may append a few remarks by Dr. THOMAS WILLIAMS, of Swansea, who has varied the experiments of Dr. M. Hall and confirms his views. He says:]

I have repeated the experiments, with invariable success, by which Dr. M. Hall has lately proved the power of the nerves to assume an electro-genic condition. I refrain here from giving an account of the little galvanic instrument so ingeniously contrived by Dr. Hall, by means of which it is possible to develope an inconceivable minute amount of galvanic power. It consists simply, as Dr. Hall in another place has explained, of a small strip of zinc, having soldered to one end a silver wire, which is brought back upon the zinc in the form of the letter U. The nerve of the galvanoscopic frog of Matteucci, if thrown across the arms of the machine, will excite muscular contractions if the current from the positive electrode traverse the nerve centrifugally; whilst no muscular action occurs if the zinc pole be placed distally, and the galvanic force directed therefore centripetally along the nerve.

From the conditions of this experiment, it is obvious that the galvanic current itself does not pass beyond the silver electrode on which the nerve is lying; it is returned along the silver wire towards the positive source, the nerve serving merely the function of a string to connect the active and passive poles of the apparatus. But although, as Dr. Hall has so acutely proved, the galvanic current departs from the nerve at the point where it reposes in contact with the silver electrode, the nerve, notwithstanding, throughout its whole course, as far as the extremities of the toes, and therefore *beyond* the part on which *direct* influence of the galvanic excitant is exerted, assumes a new functional state, and the muscles of the leg are thrown into persistent contraction. This excited state of the nerve Dr. Hall has called the electro-genic; that produced by strychnia, being similar, he has called the strychnogenic. Electricians would describe it as an *induced*, or secondary condition. The suggestions arising from the *principle* of these beautiful demonstrations of Dr. Hall led me to perform several experiments, which I afterwards found had already been tried by Matteucci. I exposed the two sacral nerves of the frog, and connected them, whilst the animal was still living, by the galvanoscopic frog, without inducing in the muscles of the latter the least appearance of contraction. From the analogy suggested by the electro-genic facts established by Dr. Hall, it seemed to me a probable supposition, that although the muscles of the animal body may not be excited to contraction by an electric or some allied current, conducted by the nervous ramusculi by which they are actually traversed, it might yet result that some functional excitation of these remote muscular branches occurred, after the manner of the electro-genic or *induced* condition, sufficiently energetic to determine the contraction of the muscles.

[Dr. Williams gives a diagram showing the origins of the anterior and posterior spinal nerves, and the circle which they make when assisted by the ganglion on the posterior nerve. He then says:]

In this experiment the galvanoscopic frog is made to connect the anterior and posterior roots of the spinal nerves while yet within the theca vertebralis, before, therefore, they converge in the ganglion. When the experiment is skilfully executed, distinct contractions take place in the galvanoscopic frog. It will be seen that this experiment is different in principle from that in which two compound cerebro-spinal nerves—i. e., the two sciatics—are connected by means of the galvanoscopic frog. In the latter case, if there be dynamic forces in the nerves at all approaching in character to the galvanic, they cannot impress the test nerve; for in each sciatic nerve thus electrically connected, there must reside two influences acting in diametrical opposition, and tending, therefore, to neutralize each other. The galvanoscopic frog *could* not manifest the least movement. During the repetition of Dr. Hall and Matteucci's experiments, the sources of fallacy and difficulty arising from the compound character of the spinal nerves presented themselves to my mind more and more palpably. The question irresistibly arose—How are these opposed, yet contiguous currents, to be examined singly and separately? The answer was immediate, —At the roots of the spinal nerves. The experiment is surrounded by great difficulties. The animal must retain its circulation and spinal excitability, or the nervous currents cannot be excited. The roots of the nerves are placed at an inaccessible depth, and surrounded by bone. The animal should be etherized, and the required conditions are fulfilled. I have succeeded in the rabbit and the dog. I have tried without success, at the slaughter-house, on the ox and the calf immediately after death. This experiment seems to me to involve the true theory of the ganglions on the posterior roots of the spinal nerves. They subserve simply the purpose of electrically uniting the two roots, in order that the current emitted along the *motor* root may *immediately* return back to the centre along the *sentient* root. The motor root thus carries the *direct* current, and the sentient the *reverse*, the motor root coinciding, therefore, with the positive electrode, and the sentient the negative, the ganglion constituting only a medium of galvanic union, the solder uniting the two poles. From this explanation it is manifest that the direct current travels along the conducting motor root only to the distance of about an inch and a half from the centre, at which point it departs from the course of the *direct* conductor, enters the ganglion, and returns by the sentient root.

Then, all that tract of the motor nerve lying to the periphery of the ganglion, or between the ganglion and the extremities of the nerves in the muscles, cannot ever be the subject of any immediate influence from the current affecting the root. The condition of the nerve, whatever be its molecular nature, must therefore be an *induced* or *secondary* state, which immediately precedes, and occasions, the contraction of the muscles. The induction of the nerve is the result of the intense current operating on the root, or the extreme of the line. Let this explanation be reversed, it will become equally applicable to the sentient nerve; the *reverse* current proceeding from the ganglion, back towards the centre, exciting in the root such an intense polaric condition as to affect the whole extent of the nerve, the ganglion to the skin, with that *induced* change required for the fulfilment of its function. It is impossible at present to conceive the nature of the relation, if any exist, between the muscular electric currents of Matteucci and the force affecting the nerves.

Lancet, Nov. 13, 1847, *p.* 516.

16.—ON THE SIGNS DERIVABLE FROM PARALYSIS.

By Professor Andral.

[Speaking of alterations of motion as signs of affection of the nervous system, M. Andral says—]

From the seat of modified motility we may sometimes detect the seat of the disease in the nervous centres: for instance, alteration of motion in both limbs of one side points, in the first place, to disease of the cerebrum, and in the second, to disease of the side of the brain corresponding to that side of the body in which motion has not been altered. This observation not only applies to the cerebrum, but also to the cerebellum, but does not hold good for the pons varolii. It might, it is true, be said that in some forms of meningitis, fluid pressing more upon one side of the brain than upon the other—in tumours occupying the membranes, or in meningeal hemorrhage—the same crossed effects of paralysis will be observed; but these cases are extremely rare: they constitute exceptions, and do not annul the diagnostic rule above established. It has been asserted that pressure of hemispheres downwards was more prone to occasion paralysis than lateral pressure, and hence that the seat of meningeal hemorrhage or effusion might occasionally be surmised; but the fact itself should not be admitted until further demonstration. In reading attentively the authors who have treated of these subjects, from Valsalva and Morgagni, down to our own contemporaries, perhaps twenty cases might be collected in which paralysis was found to exist on the same side as the anatomical change within the brain. Of these twenty cases, the greater number are not sufficiently detailed to be conclusive; but some five or six must be accepted. Morgagni relates one, in which he took every precaution to avoid error. In the "Archives" of July, 1846, M. Bouillon Lagrange published another, accompanied by every detail, and which seems perfectly authenticated. M. Blandin observed one case of the same description, in which the disease occupied the posterior lobules of the brain, and he explained the presence of paralysis on the same side by the anatomical fact mentioned by Gall, viz., that the fibres which run from the medulla oblongata to the posterior cerebral lobules do not decussate. This remark accounts, it is true, for cases like that of Professor Blandin, but leaves unexplained those in which the alteration occupied the anterior parts of the hemispheres. One limb only may be paralyzed from cerebral disease, and the signification of this modification of motion is the same as when the two limbs of one side are affected. It has been often asserted that, when the arm was paralyzed, disease of the optic thalami might be inferred, and alterations of the corpus striatum when the motion of the leg was modified. Some facts have been adduced in support of this theory, but a greater number militate against it. When the spinal cord is diseased, alteration of motion in the limbs shows itself in a different manner, both limbs, inferior or superior, being usually affected at or about the same time. In spinal affections the paralysis does not in general take place suddenly: when the four limbs are successively or simultaneously deprived of motion, we are compelled to admit the presence of anatomical change in both hemispheres, in the pons varolii or in the spinal cord. Alteration of the movements of the face indicates disease of the brain, or pressure upon the portio dura; when due to cerebral disorder, it takes place on the same side as paralysis of the limbs. But when the leg and arm of one side are deprived of motion, and when the face is paralyzed on the opposite side, a double cause to these symptoms must be admitted to exist. Alteration of movement in the tongue is caused by disease of the brain; also in the eye: squinting, for instance, is often one of the symptoms of meningitis. Paralysis of the rectum and bladder is more frequent in maladies of the spine than in those of the brain, and usually follows loss of motion in the inferior extremities. It is also, in most cases, disease of the spine which occasions paralysis of the œsophagian, pharyngeal, or respiratory muscles, In apoplexy, however, pulmonary congestion and stertorous breathing are frequently observed. The muscular parietes of the abdomen are not uncommonly struck in diseases of the spine, and at their incipient stage, by semi-paralysis or spasmodic contraction.

We now turn to the study of the alterations of motion, considered as to their nature. Mobility may be diminished or abolished, and it may be perverted; hence two great divisions, which we will successively examine.

When motion is diminished, incomplete paralysis is said to exist; the paralysis is complete when movements are altogether abolished—two conditions which may indicate disease of the nervous centres, of the nerves themselves, or of muscular structures.

In the first place, paralysis may be present without any appreciable anatomical alteration of the nervous centres: when lesions are detected, their nature is often pointed out by the mode of production of the paralysis. Thus, when loss of motion has taken place suddenly, and at once attains its highest degree, hemorrhage has most probably occurred in some portion of the nervous centres: if the hemorrhage or apoplexy be slight, the paralysis is not complete; the contrary occurs if the local damage is considerable. When paralysis increases, even very rapidly, after the first instant of its production, its cause is not to be sought for in hemorrhage, but in encephalitis, followed by rapid ramollissement. Another sign distinguishes the paralysis due to softening, from that produced by hemorrhage: it is contraction in the paralyzed parts—a symptom which may precede the loss of motion in ramollissement, but is never observed immediately after an apoplectic stroke; when it occurs in cerebral hemorrhage, it is only several days after the seizure, where local reaction takes place within the brain. Paralysis which comes on in very slow and gradual stages is due to chronic softening of the cerebrum, and may also be occasioned by the presence of tumours or morbid productions within the skull, pressure being thus produced upon the cerebrum. In these various cases, paralysis is partial. But diminution of mobility has, in one instance, a tendency to become general: observation teaches us that this general paralysis, which begins by difficulty of the movements of the tongue, chiefly observable in the articulation of words, which soon produces inability to raise the feet from the ground, afterwards impedes the motion of the arms, and finally attacks the rectum and bladder, is usually preceded or followed by loss of memory, and more or less derangement of the mental powers; it is very often met with in the insane, and was for a long time considered as belonging exclusively to the history of insanity; but more rigorous researches have clearly shown that it may be quite independent of any alteration of the mind. Authors do not agree upon the nature of the anatomical lesion by which it is caused, and, from the results of our own experience, we are inclined to refer it in general to alteration of the cerebral envelopes, principally to serous suffusion beneath the arachnoid, within the ventricles, and at the basis of the brain. The cortical substance, and even sometimes the medullary texture of the cerebrum, may also be indurated or softened. We believe that, when the cortical substance has been in the first place affected, the symptoms begin by disturbance of the intellect; and that, when the meninges and the basis of the brain have been the primary seat of disease, its first signs are alterations of motility; but we cannot do better than refer you for further information to M. Calmeil's excellent work on the subject. In some cases of introduction of toxic substances into the system no alteration whatever is found on dissection, and yet paralysis has been present: for instance, persons who have suffered much from saturnine intoxication are subject to delirium and epileptic convulsions, which cannot permit us to doubt that the brain has undergone some modification. These subjects often become paralyzed, the extensor muscles of the hands and fingers losing their power of contraction, great pain sometimes existing at the same time in the affected extremities. Again, in hysteria, local paralysis, most fickle in its characters and duration, shows itself frequently. And, as a third instance, we may mention *pellagra*, a disease recently described, which begins by an eruption on the skin, and leads to paraplegia. In this disease, attributed by Dr. Rousselle to the use of bad Indian corn, no alteration in the spinal cord has ever yet been detected, nor has any been discovered in the brain of paralyzed subjects who had suffered from hysteria or from saturnine intoxication.

Some forms of paralysis are certainly due to local alterations of the nerves. Thus paralysis of the deltoid muscle is frequently the result of pressure upon the circumflex nerve; and paralysis of the face often results from disease of the portio dura. In this latter malady, which sometimes may be produced by a draught of cold air upon one side of the face, the aspect of the countenance is particularly striking: the wrinkles of the forehead on the affected side are effaced; the eye remains open, and the conjunctiva becomes inflamed in all cases, from uninterrupted contact with the air; the mouth is dragged towards the healthy side; the tongue is not deviated. When paralysis of the face is due to cerebral disease, and not to an affection of the nerves, the limbs are usually paralyzed also; the tongue is deviated, and we cannot assign a reason for the fact, but the eyelids retain their power of motion. Paralysis may, as we have stated, be the result of a disease of the muscles. This is observed sometimes after rheumatic pains of very great duration, or when a muscle has been kept for a long time in a state of complete immobility; the muscular tissue becomes atrophied, and may for ever lose the power of contracting.

Medical Times, Feb. 26, 1848, p. 356.

17.—*Idiopathic Tetanus treated by Chloroform.*—By W. H. CARY, Esq., Woodford, Essex.—[The patient was a little girl nine years old, who complained one cold day of cramp in her fingers, and complete emprosthotonos shortly supervened. She was treated by purgatives and large doses of opium and ether for several days, but the only thing which seemed to afford relief, and this only partial, was the warm bath.]

On the 25th, the sixth day, perceiving that exhaustion was ensuing, and that loss of power in deglutition and articulation occasionally happened, and the diaphragm was rigidly and painfully contracting, I determined to use chloroform; and accompanied by my medical friend and neighbour, Mr. Jarvis, we employed forty minims, before which she was entreating the bystanders to fall on her, and keep her down. In two minutes she was narcotised, and remained in that state fully seventeen minutes. The spasms slightly returned. At a quarter to one the same quantity of chloroform was repeated (though not constantly, so as to exercise its powers) for half an hour, which produced a sleep that continued two hours. At eight in the evening my presence occasioned some, though slight, involuntary action, which was silenced by the same dose. She slept well, and arose in the morning, at nine o'clock, quite well, in which state she has been ever since, except having slight twitchings on two occasions, when I have since visited her.

Lancet, Feb. 19, 1848, *p.* 209.

18.—ON INTOXICATION.

By G. Corfe, Esq., Middlesex Hospital.

[Mr. Corfe has lately given us a series of very practical articles on different subjects, many of which we shall place before our readers in due course. The first we give is "on Intoxication," to distinguish which, from cerebral disease, is sometimes puzzling. Mr. Corfe says—]

A patient is brought into the hospital, perhaps on a policeman's stretcher, or he is carried in by friends, who state that he was picked up in the streets, senseless. His pupils are dilated, immoveable; his breathing is deep, and low, and heavy, the expiration being short and abrupt, whilst the inspiration is a prolonged deep sigh, with more or less stertor; pulse is full and strong. The suspicion arises that the man has sanguineous effusion into one or both ventricles of the brain. But it must be again acknowledged that, of all the perplexing, deceitful, and varying symptoms which diseases occasionally put on, those of cerebral lesions or mere cerebral disturbance are, of all others, the most difficult to decide upon. We have admitted cases into the hospital in the dead of the night, brought here by policemen, who have found the patient lying senseless, or he has been seen to fall senseless on the pavement: we have bled, blistered, leeched, and purged; shaved the head, and given turpentine enemas, but all to no purpose; insensibility has remained; when, to our surprise, in twelve hours afterwards we have gone to visit our patient, we have found him perfectly sensible and tolerably well, not more surprised at the loss of a head of hair than we have been at the sudden revival of our supposed case of apoplexy. Whilst, on the other hand, I have admitted a case as one of "dead drunk," perfectly inanimate, and have, for the sake of precaution, sent him into the ward to bed, and yet have found it to prove an instance of apoplexy. I have, however, learned a valuable lesson by even these difficulties: for in every instance of late years, when a case of complete insensibility is admitted, I have requested the house-surgeon to empty, and then wash out, the stomach by means of the pump; and, if it has been from drunkenness, the "sot" has shown his character up before we have finished this operation; and if it has been one of apoplexy, it has done no harm, and it has proved that it was more than intoxication, as no alcoholic fetor has been detected in the contents of the stomach.

In all cases of intoxication the mental faculties become roused before the operation of thoroughly washing out the stomach by the pump is concluded; whilst, on the other hand, it may be said, the reverse is ordinarily the case in cerebral lesions, or in mere concussions of the brain. Before we allow the tube to be withdrawn from the stomach, in cases of inebriety, we usually inject three ounces of the dilute acetate of ammonia draught, which has an extraordinary effect—sometimes in "sobering" the head, and calming the stomach too.

I am aware that it is much easier to recommend the employment of the stomach-pump than to administer it to persons who are sometimes in the highest state of excitement bordering on maniacal fury. I am anxious, therefore, to describe the mode in which we employ this remedial agent in such cases, for until I arrived at this practical method, we were often obliged to abandon the use of the pump, in consequence of the difficulties which the struggles and powerful action of the patient's body produced; and I may here remark that, on one occasion, the gag was forced from the mouth, and the man bit the tube in twain a few inches from the cylinder, leaving the remainder nearly two feet in length, in his œsophagus and stomach, when, by the greatest manual force, I wrenched open his jaws and plunged my fingers down his throat, and was fortunate enough to seize the divided end at the point of finger and thumb just as it had slipped within the bag of the pharynx. Since that period I adopted the following method:—The patient is seated in a strong wooden chair, another chair is placed behind him, and an attendant is ordered to sit in it, and taking the arms of the patient, he pinions them by holding the wrists firmly against the back of the chair. This method serves to fasten the trunk securely in the chair; the legs are then swung in a round towel, which is passed round the ankles by a noose, and, a second chair being placed, so that the back of it shall be towards the legs of the patient, another attendant is placed in it; he carries the towel over the back of the chair, and sits upon it, and thus the legs are at right angles with the trunk, and consequently they are almost powerless. If, however, the man offers to flex the knees, the ankles are instantly raised higher, and the power of the flexors of the thigh is thereby overcome in an instant. By this position, it will be observed, the patient is deprived of all muscular power, and the only fixed point on which his body rests is the ischiadic tubera. I am satisfied that the stomach-tube may not only be introduced with comparative ease, but that the operation of the pump is perfectly harmless, when judiciously administered, upon a refractory patient thus immoveably fixed.

Medical Times, Oct. 23, 1847, *p.* 17.

19.—ON DELIRIUM TREMENS.

By G. Corfe, Esq , Middlesex Hospital.

This is a disorder peculiar to drunkards; it usually creeps on when they are deprived of their accustomed stimulus; but I have repeatedly noticed that men who are in the habit of drinking freely, and who at the same time eat largely of animal food, twice or even three times a day, rarely become the subjects of this disease; but if they fall off in their appetite for this kind of food, and still continue to take their usual quantity of beverage, bilious diarrhœa, perhaps, supervenes; they become disordered, dose themselves with salts, &c., and perhaps get bled, and the disease soon sets in with its usual fierceness of excitement. Such is the case with the brewer's draymen, and porters, potmen, &c., in London, amongst which class of persons the far greatest number of these cases occur. Such is the fact, at least, with the idiopathic form of this disease; but the traumatic variety occurs in the surgical wards continually, and even here, it may be observed, that if a drayman is brought in with a fractured thigh, and is able to continue to eat his accustomed quantity of animal food, with a fair allowance of porter, &c., he is most likely to escape the disease altogether. There is, at this moment that I write, a man in the accident ward, from one of the largest breweries, with severe laceration of the leg, and who has been allowed by Mr. Arnott, his surgeon, five pints daily of the very best porter, and which is certainly equivalent to a gallon of the publican's liquor in point of strength, and he has also been allowed full meat diet, extra bread, &c., and has hitherto escaped all symptoms of the disease.

These men, generally speaking, are rationed at a gallon per diem when in full work, and they usually drink at least another half gallon in their rounds delivering the beer to the different public-houses, where they are entitled, as they think, though it is only a custom in the trade, to have a pint of porter each, and some bread and cheese. They are not, however, habitual spirit-drinkers, and, considering the work that they do, and the temptations that lie in their way, they are as abstemious, in comparison, in dram-drinking as they are excessive in porter-drinking.

In the east part of London, and along the Thames, this disease is more frequently seen amongst the coalwhippers and bargemen, who drink even more than the draymen of the west-end; but, as they obtain their liquor wholly from the public-house, which is of an inferior quality, and not from the firm direct, as is the case with the latter class of men, it may be calculated that they swallow the same amount of alcohol in both instances.

It should be observed that every case of threatening delirium tremens is preceded by more or less biliary derangement; and, as these men rarely enjoy active or healthy secretions from their alimentary canal, it does appear, from the observation of a large number of cases in this hospital, that the disease is purely hepatic in its origin. This opinion is entertained by our talented physician, Dr. Seth Thompson, who has most successfully treated some of the worst cases of this disorder with large and repeated doses of calomel, followed by brisk cathartics; and he has never been obliged to resort to opium at all, sleep having succeeded the active unloading of the hepatic system. It has long since struck my mind that the invasion of the disease springs from a sudden or, it may be, a gradual poisoning of the blood, by means of a chemical alleration in the bile and urine; and that some of the elements of one or both of these secretions are carried through the circulation. My chief reasons for drawing these conclusions are the following:—Since I have had the opportunity of watching the admirable practice of the above-named physician, the disease has given way, in a most decided manner, under sharp purgation with calomel, &c.; and the improvement is invariably coexistent with the passage of numerous dark, offensive, and deeply-bilious evacuations. The onset of the disease is ushered in with loss of appetite, foul tongue, giddiness, nausea; and, in an effort to throw off some of the morbid cystic bile, sickness and bilious diarrhœa may probably set in also. Again, a very large number of cases, and those of the worst form, present themselves with symptoms of poisoning by urea. It is stated that they have had one or more fits; these fits are distinctly epileptic, aud exactly resemble those attacks which sometimes occur in persons labouring under albuminous disease of the kidney, and in whom the disappearance of urea from the urine, and its presence in the circulating fluids, has been repeatedly detected by Dr. Christison and others. In fatal cases of delirium tremens, an epileptic fit is often the forerunner of death.

[Mr. Corfe speaks highly of the use of cold affusion in cases where there is very violent excitement. He says—]

Robert Pyper, Esq., surgeon to the 11th Hussars, and my late intelligent colleague in this hospital, informs me that whenever the men have been indulging too freely in liquor, and that the well-marked symptoms of approaching delirium tremens manifest themselves he orders the hospital serjeant and another man to mount a table or ladder, place the patient in a tub below them, and pour, from this height, a continuous stream of cold water upon the head and chest of the offender until he is calmed down; he is then rubbed dry with a rough towel, placed in bed between warm blankets, and almost invariably falls into a deep sleep of many hours' duration, and awakes perfectly collected and well. We were induced to adopt this practice many years ago, in consequence of our utter inability to confine a strong, muscular fellow, whose fearful excitement, pugnacity, and rebellious obstinacy to take any medicine or food, set all our attempts to control him, or to induce sleep, at utter defiance. The house surgeon and myself placed a chair on each side of his bed-head with a pail of cold water upon each chair. A man sat on each side of his body, and held his head and chest down, so as to prevent him rising up in bed. Two more persons supplied us, respectively, from the pails, with pints of cold water, and we alternately poured it in a small stream upon his forehead, face, and chest; the more he bellowed, the more fluid he gulped; he struggled for breath, and, again recovering his respiratory powers, hallooed and roared, "Murder! police! murder! police!" but so much the more did he get of cold water down his throat. We saw it was a desperate case, and called for a desperate remedy, if such it may be styled. We persevered, and so did he; but at length he choked, he gulped; the respiratory system became paralyzed, so to speak, or, at least, tranquillized; he whined, spoke mildly about our cruel treatment, inquired how long we were going on with that sort of work, promised to be quiet if we would leave off, and at length sued for pity, and entreated us to give over, as he had had enough. We instantly desisted, drew away the wet clothes, rubbed him dry, had some hot blankets ready at hand, covered him up, and he fell asleep, and continued in a sound doze for thirteen hours, and awoke perfectly well, but unconscious of all that had passed, only that he had dreamt he had been out in a pelting storm!

It is needful, however, to advert once more to the fact, that a large proportion of the cases of this disease which have been admitted into the medical wards during the last two or three years, have been most successfully treated by full doses of calomel and aperients, whilst opium, as a narcotic, has been almost wholly abandoned; and whenever the former drug has acted briskly upon the hepatic circulation and has brought away, for several days successively, a large amount of chocolate-coloured, offensive bile, the hallucinations have disappeared, tranquil and refreshing rest has followed, and convalescence has rapidly succeeded. But, although the authority of so eminent a physician as Dr. Watson is directly contrary to this practice, yet it is impossible to have witnessed the gratifying results of the purgative treatment without being fully convinced that this course of practice is both safer, and is based upon pathological principles more prudent, than is the treatment of drugging a semi-maniac, who is already poisoned by morbid secretions, with another narcotic, the action of which tends directly to check the separation of those morbid agents from the system, which generate the disease.

Medical Times, Nov. 27, 1847, *p.* 113.

[MR. SOLLY points out very clearly, in a few words, the difference in the two forms of delirium tremens—the one arising from intoxication, he very properly calls *delirium ebriosorum.*]

Delirium Tremens and Delirium Ebriosorum.—It is impossible, Mr. Solly observes, to give in words all that distinguishes these two diseases; they must be seen frequently to be appreciated. But the following will assist in their diagnosis:—The head and skin generally is cool and moist in delirium tremens; dry and hot in delirium ebriosorum. The pupil varies in both according to the stage; in the early stage of both it is generally contracted, in the latter stage dilated. The conjunctiva injected and red in delirium ebriosorum; the reverse in delirium tremens. The mental derangement in the former is more allied to an exalted, excited state of intellect; in the latter it approaches fatuity and depression. The tongue is generally pale and furred in delirium tremens, sometimes unnaturally clean and red; in delirium ebriosorum it is usually dry, and sometimes brown; but this is no certain guide. The pulse is most uncertain, for, as all inflammatory affections of the brain are depressing in their effects on the heart's action, so do we find that the pulse is not hard and wiry in the hyperemic affection, which, however, never amounts to one acutely inflammatory. Still, on the whole, there is less power in the beat of the artery, and that more varied in delirium tremens than in delirium ebriosorum.

Medical Times, Jan. 1, 1848, *p.* 214.

[This disease may be produced by other cerebral excitants besides intoxicating liquids: the following case was caused by tobacco. It is related by Dr. GORDON.]

The patient, aged seventy-one, had been smoking tobacco to great excess for a number of years. At length, a short time before I saw him, he resolved to abandon the use of it altogether. The day on which he formed this resolution he smoked, in quick succession, nine cigars, which was followed by considerable nausea and giddiness for three days. These symptoms then passed off, and his health for a short time seemed better than usual; but after this brief interval he fell into a lethargic state from which he was with difficulty aroused. This condition was succeeded by the symptoms of a true delirium tremens. He was wakeful, agitated, talkative, and alarmed at imaginary objects around his bed. His pulse was about 85 a minute, full, but soft; countenance dejected, with a wild, confused look; skin cold and moist; bowels constipated; tongue moist and slightly coated.

I am not able to report the termination of this singular case, as I left the neighbourhood soon after I saw the patient; but as having a physiological interest, I will mention two phenomena which were reported to me in connexion with it.

1st. The patient, previous to this attack, had been hard of hearing. While labouring under it his hearing became excellent.

2. He had also laboured under some difficulty of speech for a number of years, owing to what seemed a partial paralysis of the tongue. When the derangement of the cerebral system came on, he recovered the use of his tongue and was able to speak distinctly and rapidly.—*American (Western) Journal of Medicine and Surgery.*

Lancet, Jan. 29, 1848, *p.* 127.

[Delirium tremens has repeatedly been treated successfully by ether and chloroform, when all other treatment has failed. Such a powerful remedy must, however, in such cases, be used very carefully, when the brain is already over-excited. Dr. ANDERSON relates a very severe case which had resisted for several days the influence of opiates, purgatives, blister to the nape, ice to the head, &c. [After relating the failure of these means, Dr. Anderson says:]

Such being the condition of things, it was decided to administer the ether, which was done by means of a hollow sponge, supplied from the outside, and covering the whole face. At first he resisted; but although there was no possibility of making him swallow medicines, there was no resisting inhalation.

After four minutes' application he became perfectly passive, and commenced drawing long and deep inspirations, with stertor and tracheal râle; pupils still contracted, and balls turned upwards. The sponge was then removed during five minutes, etherization continuing during that time, when it gradually passed off, the breathing becoming more natural, and a return of restlessness and delirium took place. The sponge was re-applied, and after four or five minutes, the effects again became manifest, and continued for from eight to ten minutes; and when they passed off, he remained much more calm, although not intelligent nor seemingly inclined to sleep. Another application was made with the same results; he no longer resisted the inhalation, but inspired with eagerness when the sponge was applied, and after recovering from the stupor, did not refuse his drinks. He dozed occasionally for four hours, took one pil. morph. gr. ss., which had been left with the attendants to be given him if he did not sleep, and fell asleep shortly after, and did not awake for six hours, when he was found to be perfectly rational, saying that he felt himself quite well. The case, when the ether was resorted to, was certainly a most unpromising one; but whether the induction of sleep must be attributed to this agent, or the narcotics previously taken, or the pil. morphiæ taken afterwards, may admit of doubt; but that the patient was quieted, and, from being violent, resisting, and furious, was rendered quiescent, passive, and obedient, there can be no question.—*New York Annalist, and Brit. Amer. Journ.*

Dublin Medical Press, Jan. 12, 1848, *p.* 25.

[Another case, of a similar kind, is related in the *Boston Medical and Surgical Journal.*]

The usual treatment having failed, and large and repeated doses of morphia proving utterly powerless to produce sleep, the patient was found on Friday morning still in a state of wakefulness and high delirium, but so much exhausted as to make it a matter of the highest moment to induce sleep immediately. In this condition it was thought expedient, as a last resort, to make trial of ethereal inhalation, and the ether was accordingly administered by the sponge.

The patient was very refractory, and required to be held by assistants, in the meanwhile struggling, raving, and cursing. After inhaling the vapour for the space of ten or twelve minutes, he appeared quiet, and was thought to be fully under the etherial influence; but upon the removal of the sponge he sprang up and commenced raving anew. The process was repeated, and continued for ten minutes more, at the end of which time the patient was brought fairly under the desired influence, and fell asleep. From this state of *artificial sleep* he passed, *without waking*, into a quiet, deep, and untroubled slumber, which continued, *without intermission*, for four hours and a half. He was seen several times during the continuance of this sleep, and within a very few minutes after he awoke. He then appeared perfectly rational, called for cold water, and asked to have his leg dressed, (he had bruised it badly during the delirium.) In the course of half an hour he fell again (as was anticipated) into a quiet sleep, which continued, with few intermissions, during the afternoon and night. This morning (Saturday) he appears perfectly rational and well, though weak. Has no recollection of anything that had happened, from nightfall on Monday, to the time of his first waking on Friday afternoon.

Lancet, Jan. 8, 1848, *p.* 47.

[Mr. Warwick, of Southwell, was sent for on the 14th of January, to see a woman forty-five years old, who was suffering from an aggravated attack of delirium tremens. A blister was applied to the neck, and half a grain of morphia given every two hours. In the evening she was no better; a turpentine injection was given, and a grain of morphia with one-sixth of a grain of emetic tartar in camphor mixture, every two hours during the night.]

Jan. 5th.—Eight A.M.: Has not had any sleep during the night; still very violent; appeared sick; bowels again relieved. Omit calomel and tartar emetic. Twelve o'clock: Making violent efforts to get out of bed. To have three grains of opium. Half-past one, P.M.: Rather worse than better. At this time chloroform was administered, by placing a cloth sprinkled with it over her face. In ten minutes she was sleeping soundly. She awoke in a quarter of an hour, but was quickly sent to sleep again by the chloroform, and under its influence the pulse fell to 80. It was administered, at intervals of a quarter of an hour, for two hours. At this time, fifty drops of laudnum were given, and the chloroform was again applied for the last time. She now said, "I am drunk; you are giving me naphtha;" but she immediately became composed, and slept soundly for three hours. Dr. Hutchinson, of Nottingham, now arrived. On our entering the room, the patient awoke, and on being asked how she felt, she said, "I am very well; what has been the matter, that Dr. Hutchinson is come to see me?" and answered reasonably all the questions proposed to her. Ten P.M.; Perfectly rational; has had some sleep; sucked a mutton chop, and had some brandy-and-water; pulse 80; pupils natural. To have forty drops of laudanum.

6th.—Had a very comfortable night; complains of thirst; has not any recollection of the circumstances of her illness, excepting her remark on the last application of the chloroform.

I am not prepared to attribute the recovery of my patient entirely to chloroform; it is, however, certain that the means used for the relief of her sufferings did not appear to be productive of any benefit previously to its employment.

Lancet, Jan. 15, 1848, *p.* 70.

[Mr. Hooper, of New Peckham, gives us another case, as follows :—The patient was a man 47 years of age, who had frequently before been attacked with delirium tremens. After two hours sleep from an opiate he was more tranquil, but in the evening again became delirious, and almost incontrollable. A drachm of chloroform having been exhibited by inhalation, Mr. Hooper says that—]

From being very noisy and unmanageable, in two minutes he dropped off into a quiet sleep, which continued for twenty minutes, when he awoke calm and rational. I regret very much that a further trial was not made, as I found he had had another attack towards morning, which I have no doubt would have yielded to the application of chloroform a second time.

Lancet, April 1, 1848, *p.* 361.

[The following case is by Mr. Worthington:—A lad, aged 17, received a bad compound fracture of the leg, and on the eleventh day afterwards, tetanic symptoms manifested themselves. A large dose of calomel, followed by turpentine and castor oil, and subsequently full doses of opium were given, and a blister applied to the spine: but the symptoms became more severe, and the next morning it was determined to try chloroform. Though its use did not prevent the fatal issue of the case, it will be seen that considerable relief was derived from it. The following is Mr. Worthington's account of the case:—]

The spasms had become more severe, and were repeated every few minutes. Trismus was now complete, together with opisthotonos to a painful degree, and the countenance presented a frightful tetanic grin, expressive of much agony. During the paroxysms the pulse rose to 160, respiration was performed in a forcible and convulsive manner, and the face was of a deep purple hue. Death from asphyxia seemed inevitable. The patient being completely lock-jawed, we were precluded administering further remedies by the mouth; it was therefore proposed to make trial of the chloroform.

A piece of sponge, containing two drachms, being introduced into the chamber of Coxeter's inhaler, an anæsthetic influence was speedily produced, and maintained, more or less, for a period of two hours and a half. The effect was striking; the muscles became so completely relaxed, that the head could with facility be bent forward, and the spine straightened. The masseter muscles lost their rigidity, so that by depressing the symphysis of the chin, the mouth could be opened to any extent. Respiration was performed with greater freedom; the pulse fell to 140; the countenance became less livid. An attempt was made to swallow one or two pieces of orange, and on questioning him how he felt, he replied, better.

The use of the chloroform was suspended for three quarters of an hour, when the spasms returned, and after two or three paroxysms, resumed their wonted activity. Inhalation was again had recourse to, and was followed by a mitigation of symptoms. It was persevered in at intervals until nearly five o'clock in the afternoon, when a frightful spasm took place, and the poor sufferer died asphyxiated, thirty-three hours from the commencement of the attack, and twelve days after the accident.

Provincial Medical and Surgical Journal, April 19, 1848, *p.* 204.

20.—*On the Use of Tartar Emetic in Chorea and in Cerebral Excitement.* — By G. Corfe, Esq., Middlesex Hospital. — [Mr. Corfe relates the case of a woman, æt. twenty-eight, with severe chorea, who was under the care of Dr. Seth Thompson. He says:—]

The violence of the symptoms rapidly subsided under the steady and repeated exhibition of tartar emetic, in large doses. The Doctor commenced with half a grain every hour, for eight or ten successive doses, and then he continued it, in the same quantity, every four, and subsequently every six hours, when she obtained tranquil and refreshing sleep, and gradually improved under this treatment alone, and left the hospital perfectly well.

I may just observe, that I have since had occasion to admire the same successful line of practice adopted by this gentleman in other cases of *cerebral excitement*, amounting almost to mania. One case, especially, is before my mind's eye: it was that of a gentleman's servant, who was brought here in a state of the greatest excitement. There had been various moral causes to produce this disorder, but when he arrived here we found him most unmanageable, so that we were compelled to use severe but firm language, and he was thus persuaded to keep in bed without any restraint from straps, strait waistcoat, &c. &c. He now commenced the tartar emetic, in the same doses as the female patient, and at the same intervals, when the stomach became nauseated after five grains had been taken, and he obtained eight or nine hours of tranquil sleep, and awoke quite rational and calm, and his convalescence went on favourably from that time. He was ordered a purgative also of calomel and colocynth, which tended to relieve his head. He has since returned to his master's employment, and continues to be quite healthy, with the exception of occasional attacks of bilious headache.

Medical Times, Jan. 1, 1848, *p.* 212.

21.—NEURALGIA TREATED BY CHLOROFORM.

By F. Sibson, Esq., Nottingham.

[In Retrospect, Vol. XV., p. 51, Mr. Sibson gives us some interesting cases of this description. He has since published other cases treated by chloroform. One case was that of a stout young butcher : the disease, which was of an intermittent character, had lasted twelve days.]

After he had inhaled the chloroform, much diluted with air, during nine or ten inspirations, he signified, by holding up his hand, that the pain had ceased. The inhalation was discontinued. He then raised his head, previously resting in the arms of an assistant, and became immediately, and for a few seconds, almost unconscious. He felt low and weak for about an hour after, and was sleepy until the evening. The pain did not return.—℞. Pil. hyd., ext. hyosc., aa. gr. v. st. sum. Ol. ric., ol. tereb., aa. ʒss. capt. nocte maneque. Ext. bellad. gr. ss.; quin. disulph. gr. vj.

Feb. 18th.—He has been free from pain or uneasiness of any kind, save a slight return yesterday morning. He now feels quite well.

This case illustrates well the favourable action of chloroform. The relief was immediate, and the pain did not return. The immediate relief was undoubtedly due to the chloroform: the permanent relief to the treatment subsequently adopted, and to the natural progress of the case. I have often seen neuralgia removed by the use of the extract of belladonna.* Chloroform and belladonna, in their therapeutic influence on neuralgia, have a similar action;—they neither of them remove the cause of the neuralgia: they both of them remove the pain, by obliterating sensation. Patients under operation, recovering from the action of chloroform, often become conscious while still insensible to pain.

[Another case is that of a woman, who had been subject to neuralgic pains in the forehead and temple for several years.]

She inhaled chloroform, much diluted with air, for seventeen seconds, when she became sleepy, but not insensible, and perfectly free from pain.—Capt. st. ol. ric., ol. tereb. aa. ʒss. ℞. Ext. bellad. gr. one-third; quinæ disulph. gr. iv. n. maneque.

Feb. 27.—She has had no return of neuralgia.

In all cases where the neuralgia is due to, or attended by, cerebral affection, chloroform and belladonna are contraindicated.

In my paper in the Gazette of Feb. 18, I traced the progressive action of chloroform, ether, and alcohol, on the brain, and classified thus their increasing effects:—Cerebral excitement; cerebral disturbance: cerebral sleep, sopor, the pupils contracted: cerebral death, coma, the pupils dilated.

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* See a paper by Dr Hutchinson on belladonna in neuralgia, in the Lancet for 1843-4.

At p. 433 of the Medical Gazette for March 10, Dr. Miller, of Louisville, relates an interesting case, where phrenitis with delirium, resulting in death, was caused by the repeated inhalation of ether at an evening party.

It may be laid down as a fixed principle, that ether and chloroform are contraindicated in persons labouring under cerebral disease; as both these agents act injuriously on the brain.

In those cases where the neuralgia is caused by disease in the nerve itself, or by the pressure of diseased bone or other diseased tissue,—in those cases, indeed, in which, from their very nature, the affection must be unyielding to any treatment, chloroform can only afford very temporary relief indeed—probably only during the time of unconsciousness; in such cases, belladonna or aconite may possibly be of service.

The inhalation of chloroform is especially indicated in those cases of neuralgia that are due to the reflex morbid sensation excited by disordered stomach and bowels, exposure of the skin to cold, and other like causes.

Medical Gazette, March 31, 1848, *p.* 535.

22.—*Neuralgia treated by the Actual Cautery.*—M. Notta adduces thirteen cases in illustration of the value of this form of counter-irritation. Of these two were instances of intercostal neuralgia, ten of sciatica, one of facial neuralgia. Half the patients were robust, the remainder debilitated and impoverished. All were well-marked instances of neuralgia,—that is to say, there were points painful on pressure, and darting pains along the course of the nerves; these pains were severe, and sleep was more or less disturbed in all the patients. Of the patients labouring under sciatica, six were quite unable to walk, and four only had received any benefit from previous treatment. In all these cases the cauterization was conducted as follows :—The patient being placed in a favourable position, was rendered insensible by etherization, and the affected part was crossed two, three, or more times, with a thin iron, heated to whiteness, after which it was covered by compresses, dipped in cold water. The cautery produced brownish lines, which the day after became dry and crisp, and eventually desquamated. The subsequent pain was inconsiderable.

In respect of the effects of the cauterization, it may be stated that the most remarkable was the notable relief of the neuralgic pain. In five or six hours the limb could be moved with facility, and the following night was tranquil; in the course of twenty-four or forty-eight hours the darting pains disappeared. Of the thirteen patients, in whom it was tried, ten were perfectly cured, two were much relieved, and in one only was there no improvement.—*Union Médicale,* Oct., 1847.

Provincial Medical and Surgical Journal, Jan., 26, 1847, *p.* 54.

23.—*Case of Intercostal Neuralgia cured by Electro-Magnetism.*—By Dr. W. H. Ranking, Norwich.—[The patient was subject to attacks of excruciating pain referred to each side of the thorax at the union of the ninth ribs with their cartilages,—judged to be neuralgic from its periodic character, its exactly symmetrical locality, the absence of fever, &c. Quinine, iron, colchicum, arsenic, were tried in turn without success; ether was inhaled during the paroxysm, but the pain returned with returning consciousness; morphia was the only thing which procured him relief, and this, of course, only temporary. Dr. Ranking says:]

Under these circumstances I determined to give little or no medicine, merely bismuth and rhubarb, and to have recourse to electro-magnetism. This agent was operated with every day during twenty minutes, and a few days only had elapsed when decided benefit was declared. The intervals between the paroxysms were prolonged, and the pain gradually became so tolerable, that the patient was able to dispense with his morphine. In the course of a month it had entirely left him, and to this time (near eight months,) he has not had the slightest return.

The instrument employed was that recommended by Dr. Golding Bird. The current was passed through the arms first, for a space of twenty minutes, the patient holding a conductor in each hand. It was subsequently made to traverse the intercostal nerves, by placing one conductor over the spine, and the other alternately over the painful spots. The tension was preserved as high as it could be borne.

Provincial Medical and Surgical Journal, April 19, 1848, *p.* 206.

24.—REMEDY FOR TOOTHACHE.

By Dr. Bushnan.

A new remedy for toothache, more efficacious than creasote, and hitherto always successful in the cases where I have seen it employed. This is carvacrol ($C^{26} H^{18} O^{2} = HOC^{26} H^{17} O$). Carvacrol, according to Professor Schweitzer, is formed by the action of potassa, iodine, or hydrated phosphoric acid, upon oleum carui, ol. thymi; and, according to Claus, by the action of iodine upon camphor. Schweitzer has shown that the product from camphor is the same as that obtained from the oil of caraway.

Preparation.—I. Ol. carui is to be distilled with hydrated phosphoric acid. The liquid that passes over is to be poured back into the retort until it no longer retains the smell of the oil of caraway.

The carvacrol separates itself in the form of an oil from the phosphoric acid.

II. In the same way a saturated solution of iodine must be distilled with oil of caraway until no more hydriodic acid is formed. The red mass which remains in the retort must be operated upon by potash. The yellow solution is to be distilled. Carvene ($C^{10} H^8$) passes over, and the carvacrol remains. It is to be purified by redistillation.

III. Equal parts of camphor and iodine are to be rubbed together and distilled until no red vapour is given off. The black mass remaining in the retort contains carbon, resin, camphine, colophene, iodine, and carvacrol; that in the receiver, camphine, colophene, carvacrol, and a little iodine and hydriodic acid, which, on standing, separates into two layers. The upper layer is to be distilled, and at 180° camphine passes over, while colophene and carvacrol remain. This is to be acted on by potash. The carvacrol may be obtained from the alkaline solution by the action of an acid and by distillation over purified lime.—(Claus.)

Carvacrol is an oily liquid, very similar to creasote, with a very unpleasant smell and strong taste. Applied on a piece of cotton to a decayed and painful tooth, it gives immediate relief. I hope Mr. Hooper will prepare this successful and hitherto unpublished remedy, and enable the profession to judge of its value.

Medical Times, Jan. 8, 1848, *p.* 236.

[The following has also been used with success:]

A mixture of two parts of the liquid ammonia of commerce with one of some simple tincture is recommended as a remedy for toothache, so often uncontrollable. A piece of lint is dipped into this mixture, and then introduced into the carious tooth, when the nerve is immediately cauterized, and pain stopped. It is stated to be eminently successful, and in some cases is supposed to act by neutralizing an acid product in the decaying tooth.

Lancet, March 25, 1848, *p.* 351.

25.—OBSERVATIONS ON HYSTERIA.

By G. Corfe, Esq., Middlesex Hospital.

[Referring to cases in which females have become outrageously excited by taking a small quantity of liquor upon a healthy stomach, Mr. Corfe says:]

Now, all attempts to pacify such persons by ordinary means, as by argument, by medicine, or by reasoning, are fruitless; they are like eels for wriggling, and like bulls for fierceness and strength; our only alternative is to fix them on the stretcher, and strap them there; mount a chair placed on each side of the head, and keep up a constant stream of cold water on the face; and the more they scream, the more cold water they are obliged to gulp down their throat, until the globus is conquered, the head cooled, the passions subdued, and, when they really find that we give the more in proportion to the screaming, they become calm, and sue for pity in some such language as, "O pray, sir, let me up;" "Don't pray, give me any more;" "I am very well now;" "I'll make no more noise," &c., &c.

It must be always borne in mind that the pitiable subjects of epilepsy present another train of symptoms from those I have cursorily described, and yet there is such an apparent assimilation in the two paroxysms, that even a practised eye cannot, at all times, decide which disease the patient is labouring under. However, I shall briefly relate the main features of the two diseases. The hysterical patient throws the trunk and limbs about with strong convulsive movements, wriggles from side to side; there is no distortion of the features, there is no foaming at the mouth, no fixedness of the eye, but it rolls about, and the lids nictate, sometimes in the most rapid manner; the pupils obey the stimulus of light, the skin is hot, the pulse is quick; there is no loss of consciousness, but grinding of the teeth occasionally, though the tongue is never bitten.

The epileptic patient lies more tranquilly, though there are convulsive throes, yet they are regular in their action, and confined chiefly to one side of the body; she is not unmanageable, a nurse can usually control her movements. The face is more or less distorted, livid, and foam issues from the mouth with or without blood; the expression of the countenance is always altered in a paroxysm of epilepsy, but rarely so in hysteria; indeed, the distortions are as frightful in the one as the features are placid in the other; the cornea is bright and glistening in the former, whilst it is dull, or lifeless, or expressionless in the pitiable epileptic. I never was deceived yet by the state of the iris before a strong hand-lamp in these two diseases. In hysteria it will contract readily, again dilate and again contract so long as the light remains before the cornea; the eyeball will roll and oscillate under this stimulus.

But the eye of the poor epileptic will evince none of these movements under a strong light. Often and often have I suddenly darted the strong glare of a lamp at a "fit case," brought in by the police on a stretcher, and though there were no symptoms of consciousness before, she has heaved a deep sigh, opened her eyes, turned away her head, and evidently showed herself up to be in an hysterical paroxysm. A few smart showers of cold water, from a quart jug, have soon brought her to her senses. Senses! should I say? No; brought her to unmask and exhibit some of her real characters. I am willing to admit, with the most eminent authorities of the present day, that many of these hysterical paroxysms only occur in those females where the uterine functions are more or less disturbed, and the general health impaired; and that, to a certain extent, they have not a control over these fits, when they approach, so as to shake them off. But by far the largest number of females who are either brought here, or who are seized in the wards of the hospital, present no such history. Their passions of jealously, envy, rage, malice, or disappointment have been roused, they have "worked themselves" up into a rage, and at length have gone off into "a fit." Now, the history of many such patients does not enable you to lay down the proximate cause of this attack to any functional disturbance. When calm, they will inform you that they were in excellent health; that they were annoyed, excited, or chagrined at some occurrence or other, perhaps a mere trifle, and they have "boiled up" at it; and thus reason has lost her sway, the reins have been let loose upon the neck of the evil passions of the heart, and women are thus ungovernable and no longer able to attend to parental advice or submit to any control.

There is also an epidemic character about hysteria: a whole ward has been infected by it upon the admission of one strongly marked case: globus has arisen in this one; pleurodynia in another; syncope in a third; nervous crying, sobbing, barking, hiccoughing, and laughing in another; a fractious and determined opposition to all discipline in the ward, or an obstinate refusal to take medicine, or be on amicable terms with the nurses and other patients, has sprung up in many more, so that there is a complete mutiny amongst the whole, some criminating others, and recrimination following in return. In the midst of this worry, vexation, and, to my mind, most annoying state of things, we are suddenly called to a case in the ward of "a girl in a fit." The paroxysm is well marked, and, without any ceremony, we commence a thorough sousing of cold water; the patient soon rallies out of it: the whole ward is in consternation at the boldness and "cruelty" of the treatment, but to a certainty, almost, we hear of no more hysteria, or hysterical symptoms, for months afterwards. Nay, I have transferred quarrelsome, irritable, and hysterical patients from a disturbed ward to one that was quite orderly and free from the malady, and the infection has run through the room, until some severe measures were adopted to "nip it in the bud." Can any argument be stronger than this, that there is very much more under the control of the will than some writers upon this subject are willing to admit?

A striking instance occurred some time ago in proof of this assertion. My valued friend James Clayton, Esq., requested me to accompany him in one of his usual visits to a female charity-school, to which he is surgeon, in the suburbs of London, in order, as he observed, that I might witness a very curious pathological scene. I was not made acquainted fully with the singular phenomena that were to be presented to my notice; indeed, it would have baffled description: for we were shortly ushered into the sick dormitory, when no great stretch of the imagination would have led a person to suppose, who had been introduced into the room blindfolded, that he was in a menagerie of gallinacea; there was, in short, the squall of the peacock, the quack of the duck, the crow of the cock, and the cackling of the turkey sent forth by a group of eighteen or twenty girls between the ages of twelve and sixteen. It was most ludicrous, and the "uproar in the building now became alarming to the neighbourhood, and from the loudness of the sounds it was difficult to separate the patients effectively;" and yet the above-named gentleman had attempted various means to eradicate this imitative epidemic from the school, but it had been hitherto ineffectual; and one of the main objects of my visit was to inform them all, before me, that I had made arrangements at the hospital to receive them there, where they would be roughly handled with shower-baths, &c., &c., unless the complaint left the house.* This information had its desired effect; the thoughts of going into a hospital, before they were really *ill*, drove away this mimicry and worrying noise, and I have not heard that it has ever returned.

Some pathologists would probably consider the above epidemic more entitled to the name of chorea than of hysteria, but we must place it, I apprehend, where the zoophytes are placed in natural history, that is, between the two kingdoms, as it partakes of the character of both of these diseases in some respects.

Medical Times, Dec. 25, *p.* 194.

26.—*Treatment of Chorea by Emetic Tartar.*—By M. SALGUES.—In a case of chorea of five years and a half standing, and which had resisted valerian, oxide of zinc, purgatives, cold baths, and narcotic frictions on the spine, M. Salgues of Dijon had recourse to tartar emetic. Each day, for a week, the child took thirty centigrammes in a drink. The first dose produced strong vomiting and an abundant diarrhœa. The others caused no apparent effect, with the exception of anorexia, and the cessation of the chorea. The fourth day, ten leeches were applied to the neck to diminish a slight cerebral congestion. A permanent cure followed.—*Rév. Méd. de Dijon, and Annales de Thérapeutique*, October, 1847.

Monthly Journal, Dec., 1847. *p.* 439.

27.—*On the Treatment of Acute Mania.*—By M. BRIERE DE BOISMONT.—M. Brière de Boismont, who had already brought before the Academy of Medicine the treatment of mania by prolonged baths, now laid before the Institute a paper on the same subject, being the *résumé* of twenty-five cases. He insisted with much reason upon the value of a method which, in the short space of a few hours, relieved the brain from the frightful influence of acute mania, and represented the advantage of employing a plan of treatment of a simple and not debilitating nature. He concluded his communication by asserting that the acute forms of insanity might be cured in the space of one or two weeks, by the exhibition of baths prolonged during five, ten, twelve, and fifteen hours, and accompanied by continuous cool irrigations upon the forehead. Acute mania was the form which was most speedily cured; secondly, acute delirium, delirium ebriosorum, puerperal mania, and acute monomania. In several of these forms, however, the cure was neither as rapid, nor as constant as in the first. Acute atoxic mania, and chronic

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* These curious cases are drawn up in detail by Mr. Oscar Clayton, and will be found in the twenty-sixth volume of "The Medico-Chirurgical Transactions," 1843.

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mania, were improved, but not in any case completely cured. M. Brière de Boismont was further of opinion that his method would be found useful in hysteria, and in other nervous maladies attended with excitement.

Medical Times, Feb. 26, 1848, *p.* 360.

28.—*Case of Loss of Speech cured by Galvano-Puncture.*—By M. Camino.—In 1813, a married woman, Rosa Ponti, then aged forty-seven, was affected with a loss of sensation and movement, in consequence of a great fright. Recovering by little and little, she regained the use of her legs, but did not recover that of her arms and head, which remained paralysed from that time. From that moment she could not articulate a single word; she stammered sometimes, but without being able to pronounce even a monosyllable. The tongue, which remained immoveable between the teeth, appeared also to be atrophied.

On the 21st of May, 1836, a metallic needle was introduced into the neck, directing its point towards the occipital branch of the first cervical nerve; then it was brought into connection with the zinc pole of a voltaic pile; and holding the tongue, elevated and stretched out on a sheet of the same metal, the circle was closed by presenting to that organ the knob of a brass director. The patient showed, by quickly drawing herself away, that she had felt the shock. The experiment was repeated, and the effect was more marked than before. She gained immediately the power of lifting her tongue. At the end of three other shocks the patient exclaimed—"Oh, Dieu!" and could answer some questions in an intelligent manner, although with some difficulty. She also became able to move her tongue from side to side.

The next day, after some shocks given in the same manner, M. Camino commenced to vary the points of contact, and to give the electricity different directions. The patient showed more and more sensibility, and the faculty of articulation followed the gradual return of the movements of the tongue.

Two days of repose employed in exercising the organ sensibly rendered the faculty of pronouncing and articulating sounds easier and more accurate. In a short time she was able to speak as before, and acquitted herself so well, and with so much ardour, that she seemed, says the author, to wish to make up as quickly as possible for the time lost in inaction and silence.

Every three or four days she came back to receive four or five shocks with the pile, not being able, as she says, to bear more.

On the 10th of June, she complained, without obvious cause, of pain in the head and a general feeling of weight, an ailment which was dissipated by a bleeding.

After some more sittings, not only was her speech recovered, but also the activity of the other paralysed parts, which became quite fit to exercise their functions.—*Gaz. Méd. de Paris.*

Dublin Medical Press, March 1, 1848, *p.* 133.

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ORGANS OF CIRCULATION.

29.—ON THE PHYSICAL EXAMINATION OF THE BLOOD.

By Dr. Copland, F.R.S., &c.

It is of great importance to the physician to observe closely the *physical appearances* or sensible characters of the blood, when removed from the subject of disease, both immediately upon and some time after its removal. It is hardly possible for him to devote his attention to the analysis or *chemical constitution* of this fluid, inasmuch as this requires considerable time and diversified experiments to arrive at satisfactory conclusions; and, besides, many of the changes observed are truly vital, or at least the results of departing vitality, and are either very imperfectly, or not at all, indicated by chemical analysis or tests, although frequently manifested by distinct physical characters.

Various changes as respects the *colour* of the blood, both at the time of removing it from the vein and afterwards, have been observed. The blood may present every shade of colour, from a pinkish hue, or a pale or florid red, to a deep red, or a brownish or dark red, or dark violet, or even to a brownish or black, or dark greenish hue. The first of these colours is observed chiefly in cases of anæmia; the latter of them in congestive diseases; and the last chiefly in pestilential or malignant maladies, or in cases of poisoning,—indicating not only a contaminated state of the blood, but also impaired organic nervous influence of the vessels and vital organs.

But it is not merely the colour of the blood, but also the rapidity and mode of its *coagulation*, and the *state of the coagulum*, that require attention from the physician. The relative proportions of coagulum and serum; the firmness, or the flaccidity or softness of the former; the presence of cupping of the coagulum, or of the buffy coat, and the thickness and density of the buff, are circumstances which will be duly estimated by him, as indications of organic nervous energy or excitement—of states of vascular action and of vital resistance. He will, from these conditions of the blood, infer existing states of the whole vascular system, and of the organic nervous system as actuating the vascular,—viewing these conditions as the results of the states of these systems; and whilst he estimates them all at their true value, he will not attribute undue importance to any one condition apart from the rest. He will not, as in a case to which I was recently called, after taking away between thirty and forty ounces of blood, again take away nearly as much within a few hours, merely because the latter cupfuls of the former bleeding were cupped and buffed, and thus nearly destroy the patient; but experience will soon show him, if his education have not taught him, that, in inflammatory affections of serous or fibrous tissues, and in diseases attended by vascular excitement, without loss of vital power or resistance or infectious contamination of the blood, the fibrin continuing abundant, the coagulum may present these appearances to the last, and even although it may be relatively small to the amount of serum.

But, in different states of the organic nervous influence or vital power, and owing to these states either primarily or consecutively, the blood presents very opposite physical characters. It coagulates more rapidly and more imperfectly, or even hardly coagulates at all, or at least does not separate into a coagulum distinct from the serum. These characters are usually observed in depressed states of vital power and resistance, and in contaminated or poisoned conditions of the blood, and are owing either to absorption of contaminating and morbid matters, or to interrupted depuration by the several emunctories. In some malignant diseases characterised by extreme depression of vital energy, with a rapid state of the circulation, the change in the appearances of the blood has been most remarkable and rapid in its accession. In the worst form of puerperal fever—a disease which I have seen go on to a fatal issue within twenty-four hours from its accession, and for which blood-letting was often most improperly and fatally employed, because it had been recommended by some dangerous because ignorant writers—the blood has, in some instances to which I was called subsequently to its abstraction, presented the appearance of a straw-coloured and very thin jelly, without any coagulum, the colouring matter being precipitated to the bottom of the vessel of a black hue, and in the manner of a powder which had been mechanically mixed in the fluid which had suspended it, and without the least cohesion between its particles. In these cases, as well as in some other maladies characterised by extreme depression of vital power, and a poisoned state of the blood, the coagulation is not only imperfect, but is of a peculiar kind; the colouring matter being detached from the other constituents of the blood almost as soon as the blood passes from the vein. The small amount of vitality possessed by the blood in these cases, is lost immediately upon its abstraction from the body; and the fibrin, although it may exist in tolerable quantity, is incapable of contracting or adhering so as to form a coagulum.

Medical Gazette, Oct. 29, 1847, p. 757.

30.—*On the Influence of Obstructed Circulation through the Heart.*—By Dr. Copland, F.R.S., &c.—*This is one of the most important sources of complicated disease.* I have before pointed out the intimate connection that exists between the circulation through the heart and that through the lungs; but so much have we been in the habit, in consequence of the modes of teaching and writing generally adopted, of viewing disease nosologically, and of regarding one species as being altogether distinct from another, and so injuriously has this acted in the practice of medicine, that we have thereby been actually prevented from seeing the connection between different diseases, and how intimately they are associated, and how readily the disorder of one organ induces or passes into that of another, until experience and repeated observation have destroyed the injurious impressions of erroneous education and false precepts.

We have all been accustomed to observe a short hurried state of respiration on the least exertion; and this has often been considered as a form of asthma, and the disease has been looked for in the lungs themselves, or the respiratory passages. The patient has been said to have spasm of the bronchi or the trachea, or some disorder of the respiratory passages, which has produced this disordered respiration. But now that we have traced more intimately the relation of the disorder of one organ to another, we have found that in these cases the lungs may be free from disease, further than congestion arising from interruption to the circulation through the heart; and we have discovered that, in the majority of such cases, the lungs are only secondarily affected, and that the heart is primarily in fault. This condition of the respiration is most frequently owing to this cause, even where there is but slight disease in the heart. Thus in weakened, nervous, and susceptible persons, the affection of either organ soon extends to the other. If the lungs are disordered, the heart becomes affected; or if the heart is primarily affected, the lungs become disordered—the least excitement of one organ extends to the other. In many persons of lax fibre, or of a lymphatic or leuco-phlegmatic constitution, the parietes of the heart are deficient in tone, and slight dilatation in these cases often takes place, so as to give rise to imperfect circulation and congestion, with or without effusion in the vicinity of the congested viscera; *the subordinate circulating apparatuses, or the subordinate orders of the vascular system, namely the vascular apparatuses of the liver, brain, and lungs, especially suffering derangement.* Numerous instances present themselves in practice, of consecutive affections of complicated character as the disease advances, during hooping-cough, dry catarrh, asthma, &c.; the heart, the brain and spinal cord, and their membranes, the portal circulation, &c. becoming secondarily affected; in addition to organic changes often also produced in the lungs themselves, and in their investing membranes.

The connection subsisting between dilatations, often slight, of one or more of the cavities of the heart, and between lesions of the valves and orifices and congestions of the subordinate orders of the vascular system just specified, more especially those of the lungs and brain, is sufficiently obvious, particularly when the heart betrays any of these lesions. But there is every reason to infer that congestions of the lungs may actually take place to even a fatal extent, without any very obvious organic lesion of the heart, or lesion of such an extent as can account for the occurrence. Thus, severe shocks to the nervous system, severe injuries of vital parts, and agents acting with great intensity, and either inordinately depressing or exhausting vital power, occasion remarkable congestion of the lungs, sometimes also of the other subordinate orders of the vascular system, and generally also with a dilated or relaxed state of the parietes of the heart's cavities. Congestion of the lungs, however induced, even in slighter grades, is a serious morbid condition, inasmuch as it arises from, or is connected with, various other lesions, either of vital action or of structural change, especially of the parts now stated; and, as it generally leads on to further alterations, to inflammatory action, to hæmorrhages, and various organic lesions, especially when neglected or improperly treated.

Medical Gazette, Nov. 12, 1847, *p.* 842.

ORGANS OF RESPIRATION.

31.—ON THE STRUCTURE OF TUBERCLE.

By Dr. H. Lebert.

The invariable elements of tubercle are the following:—

1. A large amount of *molecular granules*, perfectly round, whitish-gray in colour, or passing into yellowish, sometimes compact, sometimes appearing slightly transparent in the centre, from 12-10000 to 27-10000 of a millimetre in diameter. These granules are found, in particularly large amount in softened tubercle; in crude yellow tubercles, they conceal, and often prevent the recognition of, the peculiar tubercular globules.

2. These granules and the peculiar *corpuscula*, presently to be more minutely described, are closely united to each other by means of a *hyaline intercellular substance* of moderate consistence. This substance becomes first fluid in the softening process.

Though the two now mentioned constituent parts present nothing characteristic, we have yet to notice the most important—the peculiar constituent part of tubercle. These are the proper tubercular *corpuscula*, which I have described as globules or corpuscles peculiar to tubercle, in the last edition of the work of Louis.

The shape of these *corpuscula* is seldom entirely round, though it is probable that, at the first separation of tubercular matter by capillary transudation, they approach the globular shape, and that they acquire an irregular figure by the narrow space in which they are deposited, and by mutual compression. But in the circumstances in which they are usually placed under the microscope, they present manifestly an irregular figure, being sometimes spherical, sometimes approaching the oval shape. They are usually irregularly angular and polyhedral, with edges and angles most commonly rounded, as is seen very distinctly when they are allowed to float in water, or serum, or any other thin fluid. Their colour is clear yellowish. Their exterior is throughout irregular. We observe in them a heterogeneousness of content which gives the interior sometimes a flocculent, sometimes a cloud-like or nebulous aspect; but never did I find in them genuine *nuclei*, notwithstanding the greatest care employed for the purpose, either with the best magnifying powers, or with different chemical re-agents. There are, indeed, mostly dispersed in the interior substance of the tubercle irregular *molecular granules*, scarcely exceeding 25-10000 of one millimetre in size, sometimes only from 12-10000 to 15-10000 of a millimetre; these granules, three, five, ten, or more in number, are throughout not visible in the like layer in a determinate type. The intergranular substance in other respects invests them firmly without clear covering; the interior of the granules I never found transparent. The magnitude of the tubercular cells varies; those most spherical are from 5-1000 to 75·10000, sometimes to 1-100 of a millimetre in diameter. The oblong tubercular cells I found on an average 75-10000 of a millimetre long, and 5-1000 to 6-1000 broad.

Edinburgh Medical and Surgical Journal, April, 1848, *p.* 317.

32.—ON HEAUTOPHONICS; A NEW METHOD OF AUSCULTATION.

By G. Corfe, Esq., Middlesex Hospital.

There is an instructive point which the voice elucidates in the formation of a diagnosis of thoracic diseases; and it is the following:—that by your own voice, practised upon the chest of a patient with certain morbid changes in the lungs, you may glean some very valuable information respecting the condition of those organs. Dr. R. G. Latham proposes the classical title of "heautophonics" to this diagnostic help.

But, in order to simplify my meaning, the following illustration may be given:—Let an individual hold a hat in his hand, and, putting his face close to the hollow, let him talk into it for three or four minutes; he should practise this adjoining to a corner of a room where an angle is formed by two solid pieces of wainscot; and, having thus talked, let him suddenly shift his head and talk into this angle of wood, and instantly his voice falls a semitone or more. Let him repeat the experiment both ways alternately, and he will soon satisfy his mind, especially if he has a moderately good ear for detecting variations of sound, that, as he talks into the hat, his voice is raised half a note, and *vice versa.*

This curious study should be pursued several days, and repeatedly gone over, before the voice can be made subservient to the detection of disease in a patient; but when the ear is pretty well tutored, and can distinctly catch the modification of sounds of one's own voice—whether the individual talks into the air, into a hat, into an angle of wood, or into one of stone—he must then place his ear over the base of the heart of a vigorous, healthy man, and recite some portion in an even and in an audible voice, or, what is preferable, he may count from fifty to one hundred, and then he should carry his ear to the subclavicular region of the right side, and again talk aloud, and he will find that his voice rises nearly half a tone in the latter spot. To pursue this study pathologically, he should now place his ear over the latter spot of a phthisical patient, who is labouring under complete solidification of one ot the upper lobes, and once more count upwards, then shift his ear to the lower lobe of the opposite lung, which we will presume is healthy, and count again, and the voice which was bass, resonant, and vibrating to his own ear in the first spot, will become raised or more tenor, less resonant and less ringing, in the latter spot.

The same observation applies also to the alteration of one's own voice when we talk over the solidified lung of a pneumonic patient, who is labouring under that stage of the disease known as red hepatization; whereas, on the other hand, if there is a cavity in the upper lobes, as in phthisis, or a permanently distended lung, as emphysema, a well-tutored ear will notice that, as he talks over such spots, the voice is imperceptibly raised a barytone, and, *vice versa*, a semitone. But again, if the chest is full of fluid, as in dropsy of the pleura, or in empyema, the voice of the auscultator, like the percussion, emits only a "son mat," a dead, non-vibrating non-resonant sound. These, then, are the fundamental principles of the science of heautophonics.

During the whole of these studies the patient, of course, is a passive agent, and, therefore, is not required to take any part in the proceedings; indeed, if you begin by catechising him first, as in the usual mode of auscultation, in order to hear his own voice, or his respiration, &c., you will be sadly perplexed by his interruptions when you attempt to auscultate your own voice, through the medium of his chest, if I may be allowed such an expression, as he thinks probably that you are talking to him, and that, therefore, he must get some answers for you concerning his feelings, &c.

By these means the chest of the patient is used as a stethoscope, or is made a medium for auscultating the organs within, through the medium of the voice of the practitioner.* If any of my readers are credulous upon these points, let them amuse their ears and exercise their voices upon the chests of half a dozen healthy men, and their scepticism will very soon vanish, for they have no power to control their own alterations of intonation, since they depend upon the greater or lesser conducting power of the surfaces over which the voice is thrown. Of course, if the surface is spongy and loose, like a feather pillow, the conducting power is very small;

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* This principle is fully understood and acted upon by singers, performers on wind instruments, &c. The presence of curtains, drapery, and much glass in a room, tends to oppress the chest of the performer or singer to a painful degree; and this effect is fully obviated in the construction of those public edifices which are designed for oratory, or for preaching, singing, &c.

but if the ear is laid upon a solid oak chest of drawers, the reverberation of the voice through the conducting power of the wood lowers the tone half a note.

Medical Times, Jan. 15, *p.* 955.

In summing up the amount of information which the study of *heautophonics* will afford us in the detection and accurate diagnosis of thoracic diseases, it will run thus:—

1. That, if the ear of the heautophonon is placed over a portion of lung which is solidified, the voice of the speaker becomes sonorous, vibrating, and more resonant.

2, If the pleura is filled with fluid, the voice of the operator is muffled; there is less vibration of tone upon the chordæ vocales than under a healthy lung.

3. If there is a tubercular excavation which is nearly dry, the voice in the heautophonon rises, is shriller, sharper, more nasal, and much more resonant than in the first instance.

If there is permanent distention of the lungs from emphysema, the heautophonon elicits a dull and dead sound, and which, if long continued, gives rise to a painful sensation at the centre of the operator's *sternum;* just the very opposite effect, however, is produced by repeated and long-continued use of the instrument over a *solidified* lung: in this case the *forehead* of the operator becomes jarred, from the reverberation of sounds, which the various sinuses in the head and face greatly augment, so that a novice in this curious study will find himself occasionally suffering from weight and distress over his brows, if he uses the voice too much over solid substances for one continued period of time.

But another singular feature in the use of the heautophonon in solidification of the lungs is this: that the patient *feels* and *hears* your voice in the chest, and *the extent* to which he does so will always corrrespond with the extent of the solidification.

Medical Times, March 25, *p.* 423, 1848.

[In the application of heautophonics to the diagnosis of chest disease, Mr. Corfe goes on to say,—]

In *hydrops pericardii* the countenance is more anxious and distressed than in mere valvular disease; the orthopnœa is greater, the alæ nasi are more active in the respiratory movements, there are more fulness and greater dulness over the præcordial region, than in the chronic form of cardiac disease; whilst the sounds of this organ are distant and less marked to the ear; by the use of the *heautophonon* we may, moreover, pretty well judge of the extent of the effused fluid, and of the boundaries of the distended pericardium.

Whilst in *hydrothorax* or dropsy of the pleuræ, which not unfrequently attends the former effusion, the orthopnœa is not only severe, but the dulness on percussion is so marked, and the auscultator's vocal sounds are so manifestly altered over the seat of the fluid, that a mere novice in the school of auscultation can easily attain to a knowledge of the diagnosis of this form of thoracic disease. Neither is the recognition of unmixed or mere emphysema a difficulty. The barrelled chest, the clearness of percussion, the absence of a pure respiratory murmur, the hernia of the lung, shortly to be described, and, above all, the strong physiognomical characters of this disease, are so many illustrations of the morbid changes of the lung, that, I feel assured, if medical practitioners would only attend to these few simple principles in diagnosis, emphysema would be much more easily recognised than it generally is. But when, to this change in the pulmonary texture, there is superadded either dropsy of the lungs or of the pleuræ, or of both, and the case is somewhat more obscure, then the countenance is haggard, distressed, and dusky; the respiratory efforts are more laboured, and the auscultatory signs are more perplexing to the physician. The dulness on percussion, from the presence of fluid in the thorax, masks the physical signs of emphysema, and I know of no decided test which will enable us to ascertain that this complication of diseases exists except by the use of the voice of the patient, and by that of the auscultator. The former test is a negative evidence, and the latter is a positive one. When the ear is placed over such a chest behind, and the patient is encouraged to talk, the sound of his voice, and the thrill or vibration of that sound, are neither of them heard nor felt by the operator's ear or head. But, on the other hand, if the heautophonon is placed over the same spot, the practitioner's voice becomes muffled and deadened, just as it does when he talks with his mouth surrounded by a wet blanket or a feather pillow. I am aware that these physical signs are also met with in empyema of the chest, but this presents no difficulty whatsoever, inasmuch as the rise, progress, and symptoms of the last-mentioned disease in nowise correspond to those of emphysema, coupled with fluids in the lungs and pleuræ, so that an observing mind will be at no loss to form a diagnosis between the two.

Emphysema pulmonum, or that condition of lung which is produced by the escape of air from the cells of the lung into the cellular membrane which connects these cells together, is usually one of the main features of disease in asthmatical patients. These individuals always exhibit the very opposite state of respiration to that of a person suffering from pneumonia or pleuritis.

The thorax in this disease is acting in every part; the whole set of respiratory muscles are in full play; the shoulders are prominently thrown forwards, the clavicles, as it were, buried behind them, and the diaphragm and abdominal muscles take an active part in the efforts of respiration; added to which, if the eye glances over the chest before and behind, whilst the trunk is erect, there will be a manifest and universal bulging of the ribs, so that the front of the thorax is rounded like a barrel; and this convexity is so great on viewing the posterior parts of the chest, that a flat, narrow board or ruler, laid over the ribs, will leave a considerable space in the region of the spine, and show that this bony canal is considerably lower than the convex surface of the ribs.

More need not be said upon this branch of the subject, as this alteration in the parietes of the chest must be quite as palpable at one cursory glance as any other deviation of symmetry in the form of the thorax from disease within its walls.

But an observation ought here to be made of a fact which will help to a decision on the nature of the disease before the ear is placed on the chest of such a patient. It is this: that if there is emphysema to any extent, and it has reached the upper lobes—for emphysema usually begins in the lower lobes, and spreads upwards—each act of coughing produces "hernia of the lung," so to speak, in that triangular space which is formed by the clavicles, sterno-cleido, and omohyoidei muscles. At this point, and at this point only of the thorax, we know that the pleura is wholly unprotected by muscle; and, as the lungs are jerked up by each distressing effort of hard coughing, the emphysematous lung and pleura are forced up into this triangular space, and may be seen as one distinct tumour.

This appearance alone has often enabled me to form my diagnosis of a pair of emphysematous lungs before I had even applied my ear to the chest.

It has been already stated, when treating of the morbid respirations in asthma and emphysema pulmonum, that the voice becomes altered, is sharp, shrill, and loud; and it may here be observed also, that such patients are usually very loquacious in the description of their complaints; there is a propensity in them to talk in long, unbroken sentences. The reserved air in the emphysematous lungs, if one may so term this pent-up or extravasated fluid, enables them to do this. *Ex*piration is not the chief distress which gives rise to dyspnœa, for such is a prolonged, and not a very laboured, effort; but it is the short and distressed effort to *in*spire which is the main feature in the dyspnœa of this class of patients: they have, in fact, more air in their lungs than they want, so that, if the two actions of respiration are watched, it will be seen that the expirations compared with inspirations are five to two.*

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* The very opposite condition of voice, respiration, and manner of answering the questions put by the medical man, may be noticed in pneumonia, pleuro-pneumonia, and pleuritis, as contrasted with emphysema. The patient, in these diseases, fears to talk; the voice is subdued, as not much air is allowed to be thrown upon the larynx; in short, he has none to spare, we may say; and, as he attempts to answer your questions, there is an abrupt monosyllable or two uttered, and he stops before he has scarcely framed or uttered a small sentence. Nurses, the most experienced, cannot divest themselves of the notion that such patients are either peevish, obstinate, and are *resolved not* to answer; or else that they are deaf and cannot *hear* medical queries; or, lastly, that they are muddled (a phrase denoting with them incipient delirium), and cannot *understand* the questions. But, truly, neither of these suppositions is correct; and when nurses have begun to scold such patients for not answering the doctor's questions, especially in auscultating the lungs, when you desire to listen

In œdema, or dropsy of the lung, the thorax presents to the eye but little difference from the foregoing changes as noticed in the outset, except that there is no hernia of the lung visible, nor so much convexity of the whole thorax as in emphysema. The eye gathers but little additional information from this change of structure beyond the former disease.

By dropsy of the lung, is meant that fatal malady so often complicated with emphysema, in which, after protracted struggles of the respiratory organs, the whole capillary system of the lungs suddenly pours out fluid into the pulmonary cells, but more especially into the tissue connecting these cells together. It is not the engouement or serous infiltration of the first stage ef pneumonia, but a thinner aqueous exudation into the cellular substance of the lung itself; for serous effusion from pneumonia proceeds from the inflammatory vessels which are spread over the vascular air-cells themselves, whilst this exudation is almost wholly from the exo-cellular vessels, and by its rapid accumulation it drowns the lungs, and renders them useless, and death ensues from apnœa.

Dropsy of the pleura, or hydrothorax, is simply an effusion of serous fluid from the pleuritic capillaries into the cavity of this membrane. You will find the patient usually sitting upright in bed, or preferring to do so, if he can conveniently, either propped up by pillows, a bed-chair, or otherwise choosing to sit up all night by the fire in an easy chair. As this disease is the sequel of some antecedent though relative and serious morbid change in the respiratory organs, as the heart or lungs, so the eye of the practitioner gathers more information from observing the *posture* of the patient, than from any particular change in the symmetry of the external parietes of the chest. This state of breathing, called orthopnœa is always present in dropsy of the pleura, and, in addition to it, the lower parts of the chest are passive in respiration.

The attention of the reader should now be drawn to the main facts which are to be gathered from an ocular examination of the thorax and abdomen in three or four, at least of the most formidable diseases of the respiratory organs. 1. Pneumonia or pleuro-pneumonia. 2. Pleuritis. 3. Phthisis. 4. Emphysema, with or without dropsy of the lung.

In the first instance the surfaces of the air-cells are acutely inflammed; the air entering them is a source of irritation, and aggravates the patient's sufferings, therefore he is *unwilling* to admit it, at least no more than he is absolutely obliged to do.

In the second instance he is unwilling to do so, *not* because the air-cells are irritated thereby, but because the full expansion of the lung over the inflamed pleura distends this inflamed membrane, and thus increases his distress.

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for vocal sounds, as ægophony or bronchophony, I have usually insisted upon their being silent; have desired the patient to cough, and the lungs have thus refilled to a greater amount than before, and they have been enabled to expand more breath, and so answer questions in a more prolonged manner.

In the third case the patient is *unable* to expand his chest, and to allow a natural amount of air to pass in, because the solidification of the lungs on the one hand, and the firm adhesion of these organs to the walls of the chest on the other, render it impossible for him to inspire the same amount of air as a healthy individual does.

Whilst, in the fourth instance, the respired air is wasted by its escape from the ruptured air-cells, or is spent over the interstitial cellular membrane connecting the air-cells together; so that, although the patient is both willing and able to respire more than an ordinary column of air, yet, by his struggling efforts to do so, it is manifest that little air is actually employed in oxygenizing the blood, and that his sufferings are increased by the lungs being kept permanently distended.

Medical Times, March 18, 1848, *p.* 255.

33.—AN ALPHABET OF AUSCULTATION.

By GEO. CORFE, Esq., Middlesex Hospital.

Two Dry Sounds.—Rhonchus; Sibilus.
Two Moist Sounds.—Small Crepitation; Large Crepitation.
Three Vocal Sounds.—Bronchophony; Œgophony; Pectoriloquy.
Thus:—

TWO DRY SOUNDS.

Rhonchus.—Rhonchus, or snoring, heard in the larger bronchi, is produced by an intumescence or œdema of the mucous membrane of the bronchi, on which phlegm impinges. This sound occurs especially at the bifurcation of the bronchi, where the membrane is bevelled off, and is called by the French physiologists the "eperons," or spurs of the bronchi. When the fingers are spread out, the reflected skin from the base of one finger to that of the other, represents a magnified form of this reflection of the bronchial mucous membrane. The sound denotes the existence of bronchitis. The pathological change above described is well exhibited, in other respects, in conjunctivitis, when effusion exists beneath this membrane.

Sibilus.—Sibilus; wheezing, whistling, or cooing. Produced by the same cause as above described, with the exception that it originates in the smaller bronchi, so that the grave sounds of a bassoon, and the shrill sounds of a picolo, or the air drawn through the semi-closed lips well moistened with saliva, and through the larynx as in snoring, afford a tolerably accurate representation of these two bronchial sounds.

TWO MOIST SOUNDS.

Small Crepitation.—Small crepitation is the invariable symptom of the first stage of pneumonia, and is produced by the inspired columns of air passing through a series of inflamed pulmonary cells, which are partially clogged with sero-sanguinolent secretion. The act of rubbing the hair between the fingers gives some notion of this important diagnostic symptom. I need scarcely say that emphysema from fractured ribs and wounded lung will cause this sound also; but, as I do not wish to confuse the student by describing those morbid changes produced by traumatic causes, I shall omit any further notice of them now.

Large Crepitation is similar to the breaking of large soap bubbles, and is heard over the lower lobes behind, in cases of advanced or chronic bronchitis, the third stage of pneumonia, and in emphysema with œdema pulmonum.

THREE VOCAL SOUNDS.

Bronchophony, or increased resonance of the voice, is produced by a solid portion of lung acting as a better conductor of sounds than a vesicular or healthy portion; so that the voice of the patient rings under the ear of the auscultator. This solidification is either the result of pneumonia, or of a mass of aggregated tubercles in the upper lobes. In the latter case it is heard under the clavicles; in the former it is usually detected over the lower lobes behind.

Œgophony, or bleating of the goat. A sound peculiar only to the presence of a small portion of effused lymph between the surfaces of the costal and pulmonary pleura, the result of pleuritis. It is not heard when the effusion is copious, but it is again heard when the effusion is in the course of absorption. Hence it is an unfavourable auscultatory sign in the early, and a good one, in the latter, stages of pleuritis. This sound should be listened for over the lower lobes behind; the ordinary seat of the early occurrence of pleuritis.

Pectoriloquy is the effect of the intonation of the voice passing up the stethoscope as though it came from within the chest rather than from the mouth of the patient. Its production is the unequivocal evidence of a cavity in the substance of the lung, which cavity is usually in the upper lobes, and therefore this vocal sound is to be sought for under the clavicles. If you place the stethoscope over the wings of the thyroid cartilage, and make the person talk, you have a fair specimen of this vocal sound in the above diseased change.

Medical Times, Jan. 22, 1848, *p.* 273.

34.—ON CORYZA MALIGNA.

By Dr. C. West, Senior Physician to the Infirmary for Children, and Lecturer on Midwifery at the Middlesex Hospital.

[This name is given to an affection of the mucous membrane of the nose in children, which differs from the common coryza or "*snuffles*," in the graver character of the symptoms. There is abundant secretion of very tenacious mucus, or even of false membrane, in the nasal passages, sometimes extending even to the tonsils and palate. As the respiration through the nose is impeded or altogether prevented, the child cannot suck; and from the mouth being kept constantly open, the tongue and throat become dry, and deglutition is difficult. There is also usually extreme depression of the vital powers. These cases occur chiefly in the Continental Foundling Hospitals, but they are sometimes met with in this country. In a case which came before Dr. West, as a complication of scarlatina, the Dr. tells us that,]

A lotion was injected up the nostrils, composed of ʒj. of alum to ℥ij. of water, with great relief to the child, the secretion from the nares becoming more decidedly puriform, but less adhesive; and the child became able to suck a little. On the 28th, however, the child's powers seemed much depressed; it sucked eagerly, for the secretion from the nose had become almost watery, but it swallowed with much difficulty. A layer of false membrane of a yellowish-white colour had now appeared on the soft palate and back of the hard palate, and on the tonsils.

A lotion of three grains of the nitrate of silver to an ounce of water was applied to the back of the throat, and a mixture of the extract of bark with ammonia was given every six hours. On the 1st of November the child was better, could swallow as well as suck well, and the false membrane had entirely disappeared from the mouth, but the palate was still red, and presented some broad superficial patches of ulceration. The subsequent recovery was tardy, but the immediate danger was over, and no relapse occurred.

The simple coryza calls, as I have already observed, for but little treatment, and, indeed, treatment appears to exert but little influence over it. It is desirable, however, if there be much difficulty in breathing, that the child be taken from the breast, though it may still be fed with mother's milk by means of a spoon, since the fruitless efforts to suck aggravate its sufferings, and should therefore be prevented. If heat of skin and other indications of fever attend its onset, some mild diaphoretic medicine, with a few drops of ipecacuanha wine, may be given, attention must be paid to the state of the bowels, and in the course of ten days or a fortnight the infant will be found again breathing quietly, and the disease will have subsided. As the secretion becomes thicker care must be taken to prevent its accumulating and drying at the opening of the nostrils, by which it would cause serious discomfort to the child. In the malignant variety of the disease local as well as general treatment becomes necessary. The tendency to the formation of false membrane in the nares must be combated by injections of alum or nitrate of silver, while the condition of the fauces must be watched as narrowly as that of the nares, and similar applications must be made to them on the appearance of any unusual redness there, since such increase of vascularity is only the first stage of that process which would issue in the exudation of false membrane. At the same time, a general tonic plan of treatment will be called for, and care will be needed to ensure the child's taking a proper quantity of nutriment, since its powers of sucking and of deglutition will in all probability both be impaired.

[Dr. West remarks that when a mild coryza continues for many weeks, it is generally of a syphilitic character, and is to be treated by small doses of hydr. c. cretâ.]

Medical Gazette, Nov. 19, 1847, *p.* 868.

35.—CASE OF ACUTE LARYNGITIS.

By Dr. T. Ogier Ward.

[A maid-servant, twenty years old, having had a slight cold for a few days, was suddenly seized with pain in the larynx and dyspnœa, attended by heat of skin and very quick pulse. Twenty-four leeches were immediately applied, but the symptoms increased in severity; and suffocation seemed to be impending when Dr. Ward saw her. He says:]

I first gave her two grains of tartarized antimony in a little jam, which she swallowed with very great difficulty, making the same efforts as if she had a quinsy, though no affection of the throat was discoverable by the eye; and having waited some time, and finding no effect produced, I inserted a few grains of powdered alum into the tube of my caustic case, and blew them into her throat, which the alum readily entered during her efforts to inspire. Cough was instantly excited, and as soon as it had subsided I blew in more alum, with a similar result, until I had used about nineteen grains of alum at three insufflations. After the cough had ceased the third time, she said in a clearer voice that she was relieved, and began to breathe with more facility, the respirations falling from sixty to forty a minute, and the pulse sinking from 150 to 120. She now began to converse, and told me that the larynx was the seat of the pain, and that she felt a little thing of the shape of a heart in her throat that seemed to stop her breath. Soon afterwards the emetic began to act, she vomited freely, and in the course of half an hour she was out of immediate danger, though still suffering from pain in the larynx. Calomel and pulvis antimonialis, with saline mixture, were now ordered, and in a few days she completely recovered; but, so different was her appearance the morning after the attack, from the subsidence of the fever, and the removal of the expression of anxiety from her countenance, that I failed to recognize her at my visit.

[Dr. Ward observes, that the difficulty of swallowing, and the fact of the patient's feeling a swelling at the back of the throat, indicate œdema of the epiglottis, and show that the case was inflammatory and not spasmodic. The œdema was rapidly removed, he thinks, by the application of the alum.]

Provincial Medical and Surgical Journal, March 22, 1848, *p.* 144.

36.—ON THE TREATMENT OF CROUP.

By Dr. C. West.

[When an attack of croup is apprehended, we must confine the little patient to the bed-room, and give an emetic of ipecacuanha and antimony, followed by a mild diaphoretic with small doses of antimonial wine. And the patient must be sedulously watched, and visited late in the evening, so that we may observe the character of the respiration during sleep. But when an attack has actually come on, our treatment must be much more energetic. Dr. West thus details it:—]

The abstraction of blood, and the administration of tartar emetic, are the two measures on which your main reliance must be placed; and you must bleed largely, and give tartar emetic freely, remembering that if relief does not come soon it will not come at all,—that there is not danger only, but death, in delay. I have never met with an exception to the rule which prescribes the free abstraction of blood in every case of severe idiopathic croup, when seen at an early period, and before the purple lips and livid countenance, and failing pulse, announce the long continuance of a serious obstacle to the free admission of air into the lungs. Even in very young children local depletion forms in these cases but a poor substitute for general bleeding, for it is not merely the abstraction of a certain quantity of blood that is needed, but its removal in such a manner as most speedily to produce an effect on the system. Bleeding from the jugular vein is preferable under these circumstances to venesection in the arm, since the latter often fails in children under three years old; and the blood never flows so freely as when taken from the jugular vein. It is not easy to state in figures the exact quantity to be abstracted, since the child's previous health, the intensity of the symptoms, and the effect produced by the flow of the blood, must all be taken into account in determining when to stop. Dr. Cheyne says, "The removal of three ounces of blood from a child between one or two years of age, or of six ounces from a child from eight to ten, generally appears to make a sufficient impression on the disease;" and this is a sufficiently near approach to a correct estimate of what is usually needed. The effect of free venesection is often very striking, and, as the blood flows, the respiration may be seen to become notably easier. But though the relief thus afforded is very great, it proves but temporary; and unless followed by other remedies, the symptoms will often regain their former intensity in the course of four or six hours. I have not seen any instance in which the repetition of general bleeding appeared indicated, but many of you will probably meet with such cases in the country. Local depletion I have occasionally employed with advantage a few hours after the general bleeding; but if you follow up the first loss of blood by the free employment of tartar emetic, you will often be spared the necessity of further depletion. It has been recommended, that in croup cases leeches should be applied to the top of the sternum rather than to the windpipe, since difficulty may be experienced in arresting their bleeding if applied in the latter situation, as children are very intolerant of pressure in that neighbourhood. The caution is worth bearing in mind, but if you superintend the application of the leeches yourselves, which in such a case you certainly ought to do, the advantage of drawing the blood as nearly as possible from the affected part will more than make up for the risk of some slight difficulty in stopping its flow.

To accomplish any real good by means of the tartar emetic, it must be given in doses of an eighth, a quarter, or half a grain every ten minutes until vomiting is produced, and the same doses should afterwards be continued every half hour, until decided and permanent relief has been afforded. The dose that at first caused vomiting, may, after it has been repeated a few times, cease to excite it, in which case we must increase it, and not rest satisfied with tolerance of the medicine having been established, since its utility appears to be closely connected with its emetic power. Nauseating doses of antimony have not seemed to me to check the disease so surely, while they cause a greater depression of the system, and thus mask the approach of the fatal event. A striking illustration of the superiority of emetic over nauseating doses of medicine is given by M. Valleix, who states that in thirty-one out of fifty-three cases of true croup, ipecacuanha and antimony were employed in full doses as emetics, and of these thirty-one cases fifteen recovered; while of the twenty-two cases in which their use was but sparingly resorted to, only one recovered.

If, after antimony has been thus administered for four or six hours, no satisfactory measure of improvement should have yet appeared, local depletion may be resorted to, or possibly a repetition of general bleeding may in some cases be ventured on. If the croupal symptoms, on the other hand, should have begun to abate, the antimony may be given at longer intervals; but you cannot be too much on your guard against being misled by temporary improvement, and abandoning the medicine too soon. Its use likewise is not to be relinquished by gradually diminishing the dose, and substituting a quantity sufficient only to induce nausea for that which caused vomiting, but a full dose should be given every hour or two hours, instead of every half hour, and if amendment continue, the interval may be prolonged to three, four, or six hours. It is now, after the severity of the disease has been subdued by antimony, that the time has come for the administration of calomel. From the very commencement of the attack, mercurial inunction may be had recourse to every two or three hours; but the action of mercurials is far too slow to overtake a disease which tends so rapidly to a fatal issue. At this period, however, calomel seems to have a two-fold utility; it counteracts the tendency to the formation of false membrane in the air-passages, and prevents or subdues that inflammation of the lungs which is so frequent and so fatal a complication of the disease. I usually employ it in doses of half a grain or a grain in children from two to five years old, every hour or two hours, in combination with minute doses of ipecacuanha, but interrupting its use at intervals in order to give an antimonial emetic. The appearance of any exacerbation of the croupal symptoms, however, would lead me at once to discontinue the calomel, and to return to the energetic employment of antimony.

Medical Gazette, Jan. 14, 1848, *p.* 45.

[If the patient is seen too late for the employment of the antiphlogistic treatment, or, if by the administration of antimony, &c., we fail to relieve the dyspnœa and stridulous or sibilant breathing, while at the same time the child is becoming cold, the pulse feeble, and the lips livid, we must adopt a totally different mode of treatment. This is thus recapitulated by Dr. West:—]

An attempt must be made to arouse the child from the state of collapse into which it is sinking, by placing it for a few minutes in a hot mustard bath, and emetics of the sulphate of copper should at once be administered. The sulphate of copper has been considered by some writers to be possessed of a specific influence over croup. I cannot, however, take this view of its action. It has seemed to me to be nothing more than an emetic of great power, and therefore especially applicable in cases where considerable depression exists, and where the stomach has consequently lost much of its irritability. I am accustomed to give it dissolved in water in quarter or half grain doses every quarter of an hour till free vomiting is produced, but have never trusted to it alone, in the same way as in an earlier stage of the disease I am used to rely on tartar emetic. I employ it with a two-fold purpose; first, to obtain the stimulant action of an emetic: second, to prevent if possible the accumulation of false membrane in the larynx. Hence, if the child seem again sinking into a state of collapse, or if coma appear coming on, or if the dyspnœa become much aggravated, the sulphate of copper may again be used to induce vomiting. Your main object, however, must now be to bring the system as speedily as possible under the influence of mercury, though the attempt will very likely fail, and the most complete success by no means implies the recovery of your patient. With this view a grain of calomel may be given every hour to a child from two to three years old, unless the existence of profuse diarrhœa should contra-indicate its use; while, at the same time, a drachm of strong mercurial ointment may be rubbed into the thighs every two hours. If diarrhœa be present, the calomel must be given more sparingly, or even be altogether omitted; but the inunction may be used even more frequently.

In this stage of croup the decoction of senega is a medicine of great value, and may be given in combination with the carbonate of ammonia and tincture of squills every two hours. The pungency of the ammonia is best concealed by sweetening the medicine with treacle or coarse sugar, and mixing it with about a third of milk, and in this form children will seldom refuse it. No other remedy or combination of remedies has appeared to me to be so useful as a stimulant expectorant in the advanced stage of croup or bronchitis. The patient's strength must be supported by beef-tea, and a generally nutritious diet, and even wine may be indicated; though small, indeed, are the hopes that remain when the vital powers have sunk so low as to require its employment.

[When and where are we to apply blisters? Dr. West advises us to apply a blister to the throat in cases where after the employment of all proper bloodletting, and the exhibition of antimony, relief is not obtained within six hours. He thinks blisters to the sternum nearly useless, except when the disease has been checked by antiphlogistic remedies. Dr. West appears to think that the operation of tracheotomy is not very generally applicable to cases of croup as occurring in this country.

There is a variety of croup of an asthenic character, in which the laryngeal affection is connected with pseudo-membranous inflammation of the tonsils, soft palate, and fauces. This may be an idiopathic disease, but is not commonly so. Dr. West observes:]

It is not as an idiopathic affection that this form of croup has come most frequently under my notice, but as a most *dangerous complication of some other disease, almost always of measles.* Under these circumstances it frequently disappoints the most well-founded hopes of our patient's recovery, sometimes running its course very rapidly, at other times so insidiously that nothing but the greatest care will secure us against overlooking this most fatal malady.

This variety of croup seldom begins until the eruption of measles is on the decline, or the process of desquamation has commenced. Its occurrence is most frequent from the third to the sixth day from the appearance of the eruption, but it oftener occurs at a later than at an earlier period. It is sometimes attended with well-marked symptoms from the very first, but it often happens that the character of the disease is masked, and its course insidious, and that the degree of suffering during life affords no correct index to the amount of mischief which may be revealed by a dissection after death. Of itself it is highly dangerous, and its hazard is increased by the frequent co-existence with it of inflammation of the lungs, which serves moreover to throw the symptoms of croup into the shade. When the laryngeal affection comes on three or four days after the appearance of measles, its presence is usually betokened by much more obvious symptoms than when it occurs after the lapse of a longer period from the febrile attack. Sometimes, however, it developes itself unnoticed, simultaneously with the measles, and causes a fatal issue when the medical attendant is least prepared to expect it. The child in such cases is evidently more seriously ill than can be accounted for by the mere existence of measles: but he makes no definite complaint, neither are there any obvious indications of the special suffering of any particular organ. There are considerable drowsiness, disinclination to swallow, and reluctance to speak; but the cough may be very slight, and the respiration free from distinct croupy stridor, while the child speaks in so low a tone that it is almost impossible to appreciate any alteration of the voice. Under such circumstances, the most careful observation is needed to avoid error. The loss of voice should of itself direct attention to the state of the larynx; the cry should be listened to attentively; pressure should be made on the larynx, to ascertain whether much tenderness exists, and examination of the fauces should never be neglected.

[More frequently, however, the laryngeal affection attends the process of desquamation, and it is then almost equally obscure and insidious. But under whatever circumstances this form of croup may arise, it is attended by so much depression as to forbid the employment of active antiphlogistic treatment. Dr. West has occasionally applied leeches when the croupy symptoms were prominent; but, says he,]

The two means, however, on which I place my chief reliance are the careful and repeated cauterization of the fauces, and the employment of emetics. In most instances a solution of a scruple of nitrate of silver in an ounce of distilled water, applied by means of a sponge, or a piece of soft rag fastened on a small portion of whalebone, answers every purpose. If the deposit of false membrane be extensive, or the ulcerations about the tonsils present anything of a sloughy character, the strong hydrochloric acid, diluted with twice or thrice the quantity of honey, is a better application. At the same time that I adopt these local measures I employ the tartar emetic in the same manner as in cases of simple cynanche trachealis, except that it is not always desirable to give it in such frequently-repeated doses as in the other more active malady. If relief be not speedily obtained, a mustard-poultice, or a blister, should be applied to the throat. In any case where the vital depression is very considerable, the mustard-poultice only should be employed, since, under such circumstances, a vesicated surface in the child often does not heal favourably. The slower course which these cases often run, affords more time for the action of calomel than we often have in pure cynanche trachealis, and unless the presence of diarrhœa contra-indicates its employment, the remedy is one not to be omitted. It should then be given in doses of one grain every hour to a child of three or four years old, combined with a quarter of a grain of ipecacuanha; but if the symptoms be at all urgent, the emetic should be repeated every four or six hours, to detach any false membrane that may have been deposited on the fauces, and cauterization should be practised again to prevent their renewal. As improvement advances the remedies may be repeated at longer intervals, while expectoration may be promoted by the employment of the decoction of senega, with squills and ammonia, as has been already recommended. Care must be taken throughout not to depress the child too much by over active treatment; nourishment must be given from an early period, and even before it is safe to discontinue the cauterization of the throat and the occasional employment of emetics, the extract of bark in combination with its tincture, or some other form of direct tonic, may be needed.

When consequent on measles, the same general plan of treatment must be adopted, though with far slenderer prospects of cure. The cauterization of the throat is in such cases especially necessary; and the ulcerated condition of the mouth is often much benefited by the frequent application to it of a solution of two scruples of borax in an ounce of water. The tendency to diarrhœa often prevents the employment of calomel, while, owing to the weakened state of the system, we cannot always venture on the use of antimony. In such a case, we may still have recourse to mercurial inunction; and while the local cauterization is most sedulously attended to, emetics of ipecacuanha may be given two or three times a day, or the sulphate of copper may be substituted for it, if it cause purging, or fail to vomit. Here, however, more than in the idiopathic form of the affection, we find in many instances a most urgent necessity for supporting the child's strength, even from the very first. The occurrence of pneumonia is the accident most to be dreaded in the progress of the case, and may require a modification of the treatment, though in its management the asthenic character of the affection must always be borne in mind.

Medical Gazette, Jan. 28, 1848, *p.* 131.

37.—*On Spasm of the Glottis.*—By Dr. C. West.—[The early symptoms of spasm of the glottis (*syn.* cerebral croup, spasmodic croup,) are those ailments popularly ascribed to teething; the child droops, loses its appetite, is restless and fretful. After a few days or weeks, a slight crowing sound of a characteristic kind, something between the stridor of true croup and the hoop of pertussis, is heard with the breathing. It returns in a few hours or days: and bye-and-bye an attack of severe dyspnœa accompanied by carpo-pedal contractions comes on. It is needless further to enter into the symptoms of this disease; suffice it to say that they are such as betoken "disturbance of the nervous system in general, and of the respiratory nerves in particular."]

"The causes," says Dr. West, "that may produce such disturbance are very various, and according to them must our treatment be diversified. Many writers have overlooked this fact, and, fixing their attention on some one cause, have given a defective, if not an erroneous explanation of the nature of the affection. But this is not the case with Dr. Marshall Hall, whose application of the discovery of the reflex function of some of the spinal nerves receives some of its most beautiful illustrations from this affection.

It is, says this distinguished physiologist, an excitation of the true spinal or excito-motory system. It *originates* in—

I. 1. The *trifacial*, in teething.

2. The *pneumogastric*, in over- or improperly-fed infants.

3. The *spinal nerves*, in constipation, intestinal disorder, or catharsis. These act through the medium of—

II. The *spinal marrow*, and

III. 1. The *inferior* or *recurrent laryngeal*, the constrictor of the larynx.

2. The *intercostals* and *diaphragmatic*, the motors of respiration.

[By far the greater number of cases of spasm of the glottis occur during the period when the process of dentition is proceeding most actively—between the age of six months and two years. But the mechanical irritation of the teeth pressing on the gums is not always the immediate cause of the convulsive disorder: it is frequently referrible rather to the irritation produced by the affections of the mucous membranes which are so common at this period. Or the exciting cause of the affection may be enlargement of the bronchial and cervical glands, the prehension of improper food, or the suppression of long-continued diarrhœa: or the disease may supervene in the course of chronic hydrocephalus. On the treatment of spasm of the glottis, Dr. West says, that it]

Must be regulated by the nature of its exciting cause; and this, as you have already seen, varies much in different cases.

In infants before the period of dentition, it is usually induced by over-feeding, or by food of an improper kind. Our inquiries, therefore, must at once be directed to ascertain how the infant is fed; and, supposing it to be still suckled, it will be wise to interdict any other food than the mother's milk,—or, at most, to allow only a little barley-water. Spasm of the glottis, however, occurs much oftener in infants who are brought up by hand, or in those who have been weaned, than in children still at the breast. In such cases, much pains are sometimes necessary in order to ascertain precisely the kind of food that best suits the infant. Two parts of milk, and one of barley-water, sweetened with a little loaf sugar, or equal parts of milk, and of a solution of isinglass, made of the thickness of barley-water, generally agree very well; but much caution must be used in the introduction of farinaceous articles into the child's diet. Asses' milk, which forms the nearest approach to its natural food, must sometimes be given till the child has decidedly improved; while if it be puny, and do not appear to thrive, and the crowing inspiration continue undiminished, it may become absolutely necessary to restore it to the breast.

The state of the bowels requires no less attention than the regulation of the diet. The tendency to constipation must be combated not by drastic purgatives, but by mild aperients. Castor oil often answers the purpose very well, but sometimes each dose of it nauseates a child for several hours, and then it is not desirable to employ it if a daily aperient should be needed. Both senna and manna are apt to gripe, and if they be found on trial to produce this effect, their use must not be persevered in. Few medicines act more mildly or more certainly in children than aloes; and the bitter of the compound decoction may be much concealed by extract of liquorice. The bulk of a medicine, however, often opposes a great difficulty to its employment in infancy, and, if that be the case, the powder may be substituted for the decoction. If slightly moistened, mixed with a little coarse sugar, and placed on the tongue, it will often be swallowed very readily. The habitual use of mercurials to overcome the constipation is not desirable: their employment is better limited to those cases in which the bowels are not only sluggish, but the evacuations unnatural in character.

The action of the bowels may be encouraged by rubbing the abdomen twice a day with a liniment composed of equal parts of soap liniment and tincture of aloes; or the bowels may sometimes be induced to act regularly in young infants, by the daily employment of a small soap suppository. Enemata may also be employed for the same purpose, consisting either of warm water or of gruel.

[Lancing the gums will frequently, but not necessarily, Dr. West thinks, be called for, if the disease occurs during the period of dentition. If there is much uneasiness in the head, it is useful to get a horsehair cushion made for the head to rest upon, with a hole in its centre so as to relieve the occiput from all pressure. If the cerebral symptoms are severe, we may use the tepid bath, give neutral salines with small doses of hyoscyamus, and, occasionally, even apply a leech to the head. In the paroxysm we may place the lower extremities in a hot bath while we dash cold water on the face, and try to excite vomiting by tickling the fauces. It is also our duty to warn the parents that all excitement of the child, especially by crying, tends to bring on an attack of the disease, as does also exposure to cold; and that death may take place suddenly and unexpectedly in one of these attacks.]

Medical Gazette, Feb. 11, 1848, *p.* 219.

38.—ON THE TREATMENT OF HOOPING-COUGH.

By Dr. C. West.

[In the first stage, Dr. West observes the most important measure is *care*. The child should be kept in a mild, dry, and equable atmosphere, and take light and unstimulating diet. If there is much cough we may give small doses of ipecacuanha or tartar emetic; and if much wheezing, an ipecacuanha emetic every evening. In the *second* stage, Dr. West says:]

If the paroxysmal character of the cough be well marked, and the fits of frequent occurrence, but the child in other respects ails little, much benefit will accrue from the use of hydrocyanic acid. It may be given by itself, diffused in a little distilled water sweetened with simple syrup, and I usually begin with a dose of half a minim every six hours for a child nine months old. This remedy sometimes exerts an almost magical influence on the cough, diminishing the frequency and severity of its paroxysms almost immediately, while in other cases it seems perfectly inert, and, again, in others, without at all diminishing the severity of the cough, it exerts its peculiar poisonous action on the system, so as to render its discontinuance advisable. I have never but once, however, seen really alarming symptoms follow its use, though I have employed it in many hundreds of cases. In that instance I gave one minim of hydrocyanic acid every four hours to a little boy two years and a half old. He had hooped for four days before he came under my care, and was then suffering from rather severe cough, and considerable dyspnœa. He took the acid for four days without any effect being produced either on his system generally or on the cough; but at the end of that time, after taking each dose, he uttered a cry, became quite faint, and would have fallen if not supported. This result having followed three or four times, the child's mother discontinued the medicine, and, of course, I did not resume its employment. Similar, though less severe, symptoms were produced by the same medicine in the sister of this child, a little girl of five years of age, but in neither instance was the severity of the cough in the least mitigated by it. Though no other instances of the kind have come under my notice, I always give a caution to the parents to diminish the dose of the medicine, or even entirely to discontinue it, if the child appear faint, or dizzy, or bewildered, after its administration; and I never persevere with the use of the acid if it do not give a very decided earnest of good within three or four days after its first exhibition.

In many instances, although the severity of the cough may be greatly relieved by the hydrocyanic acid, it yet does not enable us entirely to dispense with other remedies. If there be much wheezing at the chest, an emetic of ipecacuanha should be given once or twice a day, in order to free the air passages from the mucus which collects, often in very considerable quantity, and thus tends, by the obstruction it offers to the free admission of air, to favour the occurrence of carnification of the lungs. The degree to which the child suffers from the accumulation of phlegm in the bronchi must determine whether the emetic be given once or oftener during the day. If it be given but once, the evening should be the time selected for its administration; and, after the air tubes have been thus relieved, the child will often rest well, instead of passing, as it otherwise would do, a restless night, disturbed by dyspnœa and frequent fits of coughing. If there be a good deal of febrile disturbance, if the cough be hard as well as violent, if it seem to occasion pain, and be unattended with expectoration, while in the intervals of the paroxysms a frequent short hacking cough distresses the child, and generally diffused rhonchus is heard throughout the lungs, the hydrocyanic acid may be advantageously combined with small doses of tartic emetic or of the vinum ipecacuanhæ. In other cases, if the existence of considerable drowsiness, with a flushed face, becoming livid during the fit of coughing, and the suppression of the previously distinct hoop, betoken the presence of cerebral congestion, the application of a few leeches to the head will not only greatly relieve these symptoms, but will also diminish both the frequency and severity of the cough, and prepare the way for the more effective employment of the hydrocyanic acid.

[Dr. West does not think counter-irritation of much service until the decline of the disease, except there be much dyspnœa, when the chest and spine may be rubbed daily with Roche's embrocation, or soap liniment with tinct. lyttæ, so as to keep up a slight degree of redness on the surface.

We are very likely to overtreat a patient, when, in the second stage of the disease, a sudden increase of fever, and the supervention of permanent dyspnœa seem to indicate inflammation of the lungs. Against this Dr. West cautions us, saying:]

In such a case, then, I would advise you to allow nothing but the positive evidence of auscultation to lead you to resort to free depletion and the use of large doses of tartar emetic,—remedies to which you might feel disposed at once to have recourse. If you feel in doubt, remain for some time with the child, watch it carefully, auscultate it more than once during your visit, and repeat your visit every two or three hours, rather than resort at once to measures which, powerful either for evil or for good, may, if unwisely employed, destroy the life they were intended to save.

Example teaches louder than precept, and you may learn a useful practical lesson from the following history:—

A little boy, about two years old, had had slight catarrh for a fortnight, and towards the end of this time it was thought that he had hooped once or twice, though very slightly. He ailed but little, and had had none other than domestic remedies during this period; but one night, without any apparent cause, he became very feverish, his cough grew worse, and his respiration very hurried. On this account he was depleted freely by leeches, and calomel and antimony were given in large doses for two days, though without any considerable diminution of the dyspnœa. When this treatment was first adopted, it was thought that air entered one lung but scantily; but on the evening of the second day both lungs admitted air equally well, although a good deal of mucous rale attended the respiration. On the morning of the third day, the child's face was flushed, and looked much oppressed, his lips were rather livid, his respiration was extremely hurried and irregular; he coughed little, but his cough had a suffocative character, and was not attended by a distinct hoop. The hurried respiration was supposed to indicate the continuance of graver mischief in the lungs than was apparent on auscultation, and antimony was accordingly given in emetic doses. It did not produce much sickness, and the respiration diminished but little in frequency during its employment. On the fourth day the child still breathed very hurriedly, and its inspirations varied from 40 to 60 in a minute, without there being any obvious cause for these great changes in its frequency. On the fifth day the breathing increased in rapidity, while the pulse began to lose power; and not only had the antimony ceased to exert any emetic power, but squills and ipecacuanha failed to induce vomiting. Active measures were suspended towards the evening of this day, and a grain of Dover's powder, given every six hours, somewhat diminished the hurry of the breathing, but it was discontinued after the third dose, on account of the gradually deepening drowsiness of the child. The child, however, still continued heavy and oppressed, the cough became more frequent and more suffocative, the breathing more rapid and more irregular. On the morning of the seventh day, a fit of coughing terminated in convulsions, and from that time until the morning of the eighth day, when the child died, they were extremely violent, frequent in their return, followed by carpopedal contractions, which did not subside in the intervals between them, while after each convulsion the respiration became most distressingly hurried and irregular. After a time the breathing grew constantly laboured, the face became of a deep livid colour, the hands were clenched, and the wrists bent upon the fore-arm, the spine was drawn slightly backwards, and sensation was quite abolished. At length a slight convulsive movement passed across the face, and the limbs relaxed in death.

Even when acute bronchitis really exists, you must not forget the peculiar impress which hooping-cough stamps upon it; how it heightens the irritability of the spinal system, thus exciting the hurried and irregular breathing, and rendering the child peculiarly liable to convulsive seizures. If active interference, therefore, be necessary, you would abstract blood very cautiously, while you would employ nitre, ipecacuanha, and James's powder in small doses, as a febrifuge and expectorant, rather than attempt to bring the child rapidly under the influence of antimony. At the same time, however, the peculiar tendency to obstruction of the air-tubes, and consequent collapse of the lungs, which characterizes hooping-cough, would lead you to endeavour to keep the bronchi free, by the administration, once or twice a day, of an emetic of ipecacuanha. You would employ liniments, mustard-poultices, or blisters to the chest, to combat any exacerbation of dyspnœa; and if the paroxysms of cough were severe, you would combine hydrocyanic acid with your other remedies. If the powers appeared to be on the decline, and the child neither expectorated with the cough nor rejected much phlegm by vomiting, although the bronchi were loaded with mucus, you would at once discontinue antiphlogistic measures, and have recourse to the decoction of senega, with ammonia and squills, while you endeavour by a nutritious diet to support your patient's strength.

[In the *third* stage, change of air is the chief thing to be recommended. If, however, there is much bronchial secretion, with a cool skin, moist tongue, and soft pulse, Dr. West says:]

Alum, long a popular remedy in hooping-cough, is often of much service, diminishing the secretion, arresting the sickness, and rendering the cough much less frequent. It may be given in doses of gr. iij. or iv. every four or six hours for a child of a year or eighteen months old. This remedy, indeed, may sometimes be used with advantage, even before the disorder has begun to decline, if the condition be such as I have just referred to, namely, fever being absent, and the bronchial secretion very abundant, even though the cough is violent. In other cases in which the cough continues violent after the other symptoms have abated, and in which, though there is no superabundance of secretion in the air-tubes, yet the attacks of cough often end with the rejection of a considerable quantity of mucus from the stomach, and loss of appetite and general dyspeptic symptoms are present, the hydrochloric acid is often of much service. It has been recommended as a specific against hooping-cough, in doses of from ʒij. to ʒvj. daily, but I have never employed it in other than moderate doses, such as it would be administered in under other circumstances.

If the cough continue frequent, and the hoop loud, while the only signs of constitutional disturbance are those of mere weakness, iron will generally put a stop to it sooner than any other remedy. If, however, there be a degree of feverishness, or of gastro-intestinal disorder, which for the present contra-indicate the use of iron, Battley's liquor cinchonæ may be given with great advantage, in combination with small doses of hydrocyanic acid; while every attention must, of course, be paid, by mild alteratives, and other appropriate means, to improve the condition of the digestive organs.

Medical Gazette, March 19, 1848, *p.* 399.

39.—ON THE FREQUENCY OF PULMONARY DISEASE IN CHILDREN.

By Dr. C. West.

Table, showing out of 166 cases of children dying from various diseases, in whom I carefully examined the thoracic viscera, the number of instances in which the lungs, bronchi, and pleura, presented no signs of recent inflammation; and also those in which signs of it were discovered.

The first line represents the former, and the second the latter class of cases.

Under 1mth.	From 1-6	From 6-12	From 12-18	From 18-2yrs	From 2-3	From 3-4	From 4 5	From 5-6	From 6-7	From 7-8	From 8 9	From	From 10-11	From 11-12
4	12	15	12	4	10	6	4	6		2	1	2	1	
	3	10	13	15	12	9	8	4	3	4	2	2		2

This table illustrates the fact, that, when the child is first born, the mucous membrane of the respiratory organs is endowed with but little of that susceptibility which it afterwards acquires, and that accordingly those diseases whose point of departure is from that membrane are far less frequent during the first six months of life than they become during the succeeding eighteen months; while, from the completion of the second year up to the time of puberty they go on diminishing in frequency and fatality. And there are important practical inferences which may be deduced from the facts we have just mentioned. They teach us not only that a catarrh is a much more serious thing in infancy than in adult age, but also that it is more serious at one period of infancy than at another, and they warn us to guard a child, during the time that the process of teething is going on, with double care against all causes that are likely to excite inflammation of its respiratory organs.

There are some diseases which, after having occurred once, confer on persons an immunity from subsequent attacks. This, however, is far from being the case with bronchitis or pneumonia in early life, but the susceptibility of the respiratory organs appears to increase in exact proportion to the frequency with which they have already suffered, and a child who has once been attacked by inflammation of the lungs, or air-tubes, is more likely to have a second attack brought on by a slight change of temperature, than another who had never suffered from it would be to experience a seizure from a much graver cause. With advancing age this susceptibility seems to wear out, the child outgrows it; but we should act most unwisely if we were to sanction its exposure to the cold with the view of hardening it against its influence.

Medical Gazette, Dec. 3, 1847, *p* 957.

40.—ON THE SOUNDS OF BRONCHITIS.

By G. Corfe, Esq.

The sounds peculiar to bronchitis, are usually heard during inspiration; but where they are heard, as in the above instance, during expiration, it denotes intumescence or œdema of the whole mucous membrane of the bronchi, and is a much worse symptom than the former. This membrane is reflected from tube to tube, at their several bifurcations, just in the same manner that the skin, at the bases of the fingers, is reflected from the bottom of one phalanx to its adjoining phalanx, so that, whenever any ropy mucus is secreted from the membrane, it is driven upon this œdematous angle of the bronchus, and thus gives rise to these sounds, whilst the air is forced over them in expiration. I observed that it is a much more serious condition than rhonchus heard during inspiration, because the latter physical sign merely denotes slight irregularity in the bronchial surface from inflammation; whilst the former cannot occur without some effusion under, and thickening of, the membrane. I have frequently witnessed a sudden attack of suffocating dyspnœa supervene from this fierce irruption of bronchial œdema, and when it occurs in combination with cardiac disease, or with emphysema of the lungs, it frequently caries the patient off in a very few hours. The difficulty of breathing under such circumstances does not arise from any trouble to inspire, but from the inability to expire; the air cannot force its way *out;* so that the expirations are threefold more laboured and prolonged than are the inspirations.

Medical Times, March 11, 1848, *p.* 391.

41.—*On some of the Effects of Bronchitis in Children.*—By Dr. C. West.—Whenever bronchitis has reached such an intensity as to give rise to the abundant pouring out of thick fluid into the air-tubes, so that the air can no longer permeate them with facility, while this difficulty is still further increased by the loss of the ciliary epithelium, and by the weakening of the contractile power of the bronchi, which would have helped to keep them free, it often happens that the feeble inspiratory power of the child becomes wholly inadequate to fill the lungs, large portions of them collapse, and bronchitis thus becomes the indirect cause of carnification of the lung.

In some cases, the inflammation of the respiratory mucous membrane extends further than usual along the smaller bronchi, until it involves their extremities and the pulmonary vesicles themselves, when it produces an appearance almost peculiar to childhood, and which has been described under the names of *vesicular pneumonia* or *vesicular bronchitis.* A lung, or a portion of lung, thus affected, no longer contains any air—it is dark in colour, and feels tough, though solid; its surface is beset by a number of small, circular, yellow, slightly prominent spots, of the size of a millet-seed, or smaller; which on a hasty glance present a very great resemblance to crude tubercles. A very little attention, however, suffices to distinguish between them, for not only do these yellow spots differ from tubercle in their favourite seat being along the lower margins of the different lobes, but on puncturing any of them with the point of a scalpel, a drop of pus will exude, and the yellow spot will disappear. Sometimes, too, a minute bronchus may be traced, running to its termination in one of these little sacs. It has been suggested that this appearance may be due to the secretions formed in the air-tubes being forced by the column of air which enters in inspiration into the smaller bronchi and the pulmonary vesicles, the cavities of which thus become mechanically distended. The opinion that the secretions which occupy these parts are produced at the spot where they are discovered, by inflammation of the ultimate ramuscules of the bronchi, is, however, generally entertained, and is supported by very conclusive evidence. Bronchitis often exists unattended with this peculiar appearance; and on the other hand, vesicular bronchitis is met with independent of general inflammation of the air-tubes, while though usually partial, and often limited to the lower border of one or other lobe, it is sometimes very extensive, and occupies nearly the whole of the lower lobe on either side, constituting the most important of the morbid appearances discovered on examining the chest.

It may, and unquestionably often does, happen that children die of bronchitis alone, and without any notable affection of the pulmonary tissue. But it is much more frequent for the pulmonary substance to bear a part in the morbid process, and this share may either be limited to mere congestion, or may rise in degree until it produces all those consequences which we find attendant on inflammation of the tissue of the lung in the adult.

Some degree of *congestion of the lung* is almost constant if bronchitis be at all severe, for the circulation through the organ is disturbed, the blood flows less freely than natural, and its changes take place more slowly. It stagnates first in those depending parts whence position renders its return most difficult, and the portions of lung thus affected become by degrees more and more extensive. Dark, solid, non-crepitant patches may often be seen in the midst of a lung thus congested; and until the results of inflation shewed that a wrong interpretation had been given of the appearance, these patches were regarded as the centres whence the inflammation was extending to the surrounding tissue. You do not need to be reminded that they are lobules which have collapsed and become impervious to air; and portions of lung in which this occurrence has taken place seem to have but little disposition to become the seat of active inflammation, and to pass into a state of red or grey hepatization. At the same time, however, it must be borne in mind that this indisposition to active inflammation does not by any means amount to actual immunity from it; and that carnified lung may sometimes become softened, or even infiltrated with pus.

It does, however, happen now and then that the lung is found in a condition which may justly be called *lobular pneumonia*, as the result of the extension to the surrounding tissue of inflammation beginning in the air-tubes. Patches of lung will then be seen interspersed through the surrounding pulmonary tissue, of a vivid red colour, of various sizes, from that of a pea to that of an almond, irregular in shape, and not circumscribed exactly by the margins of lobules, as is the case with portions of carnified lung. This process going on in a number of different situations, the affected parts may at length coalesce, and a pneumonia, at first lobular, may thus eventually become generalized. Or, though this should not occur, the inflammation may yet go on in the isolated portions of lung to the infiltration of pus into its substance, or the actual destruction of its tissue, when a portion of the lung will appear riddled with small distinct abscesses, seldom larger than a pea, irregular in form, and communicating more or less evidently with a minute air-tube. They may be distinguished from the vomica produced by softened tubercle, partly by the absence of tubercular deposits in other parts of the body, and by their being almost always limited to a single lobe of one lung. Their own characters, however, are sufficiently well marked, for they are altogether destitute of those solid walls which the tubercular deposit forms around a phthisical cavity; though the yellow lymph which often lines them may be mistaken by the inattentive observer for tubercle. MM. Rilliet and Barthez mention having found the pulmonary substance healthy except in the immediate periphery of these abscesses, but no instance of this kind has come under my own observation; the pneumonia having in each instance become generalized.

Medical Gazette, Nov. 19, 1847, *p.* 871.

42.—*On the Treatment of Bronchitis in Children.*—By Dr. C. West.—[If the child is strong, and there is much febrile disturbance, we may apply leeches at the commencement of the attack, or at a later period, if, while the child is still strong, there is much crepitation, and of a smaller character in the lower than the upper lobes. Dr. West applies the leeches beneath the scapulæ, so that the child is not alarmed by seeing them, nor can it irritate the bites by picking them. We must carefully guard, however, against too much depletion, for as Dr. West observes,—]

There is in these cases the less excuse for over-depletion, since we are possessed in the tartar emetic of a most powerful means of subduing the disease. In a healthy child, suffering from a bronchitis of moderate severity, I sometimes give it in the form of James's powder, combined with a small quantity of calomel and ipecacuanha, every four hours for the first twenty-four or thirty-six hours. This combination usually acts on the bowels slightly as well as on the skin; and if the child be now relieved, the calomel may be suspended, and small doses of antimonial and ipecacuanha wine may be given instead in a mixture.

A severer attack of the disease would call for the use of antimony in larger doses, so as to obtain its emetic effect at first, and afterwards, by the repetition of the remedy every hour or two hours, to keep the child for one or two days under its influence. Even in cases where the disease is not so severe as to require the energetic employment of antimony, there is generally an exacerbation of fever and dyspnœa towards evening, and this is often much relieved by an emetic of antimony and ipecacuanha, which may also in many cases be repeated with advantage in the morning, when the child having been asleep for some hours, during which the mucus has been collecting in the bronchi, it breathes with difficulty on awaking, until the air-tubes having been freely emptied by an effort at vomiting, the air is once more enabled freely to permeate the lungs. Even in those cases which at first required the constant use of large doses of antimony, it is a matter of importance to dispense with them as soon as we can with safety, and to substitute the use of emetics at intervals, while we employ some milder expectorant medicine between the doses of the emetic. It can scarcely be necessary to remind you that there are few medicines which exert so depressing an influence on the muscular powers as the tartar emetic. If, therefore, in a child whose air-tubes are already nearly filled with the abundant secretion, you carry the depressing effect of antimony too far, the air will no longer be inspired with force sufficient to make it reach the smaller bronchi, and collapse of the lung will consequently take place. It follows, then, that we must not venture to carry the depressing effects of antimony so far in the child as we may safely do in the adult, but when the medicine has either ceased to vomit, or is merely regurgitated without effect, we must either suspend it altogether or greatly diminish its dose, or merely give it at distant intervals, so as to obtain its emetic action, while we allow time between the doses sufficient to allow of the child's perfectly recovering its powers. The effect of vomiting, on the other hand, is useful in two ways, for it not only empties the air-tubes of the mucus that obstructs them, but it also occasions several deep inspirations to be made, by which the air is drawn into the remotest parts of the lungs, and their tendency to collapse is thus prevented.

Your attention has on more than one occasion been called to the remarkable tendency of the nervous system in early life to sympathize in the affections of other parts. This tendency is often very evident in inflammation of the respiratory organs, and, accordingly, you must not always take the degree of dyspnœa in a case of infantile bronchitis as a measure of the affection of the lungs, since it may be only an evidence of the sympathy of the nervous system. If you treat this symptom actively without having first inquired into its import, you may destroy your patient. When first taken ill, indeed, the child's respiration was hurried and laborious; you applied leeches to the chest and gave tartar emetic freely, and the breathing, which grew less hurried and less oppressed, justified the wisdom of your treatment. But if the respiration again rise in frequency, and you, in order to reduce it, redouble the activity of your treatment, you may be disappointed in the effect that you hoped to attain; the respiration may grow more and more frequent, and the child before long die in convulsions. If in such a case you had examined the patient with due care, you would probably have discovered that the dyspnœa was not associated with increase of the heat of skin; you would have learned that it had varied much within a few hours, sometimes subsiding and then returning without adequate cause; you would not have detected any deterioration in the results of auscultation, while you would probably have perceived in the half-closed eyes, or the thumbs drawn into the palms, signs of the disturbance of the nervous system.

This nervous dyspnœa sometimes occurs early in the disease, at a time when active treatment is evidently indicated; and while that plan is continued we shall best meet this symptom by applying a mustard poultice to the chest, and by placing the child as high as the pelvis in a hot-bath. The evening attacks of dyspnœa are often more effectively controlled by this than by any other means. When these symptoms come on at a more advanced period of the disease, or in a child previously debilitated, they indicate that active treatment must no longer be persevered in. The antimony must be discontinued, or its dose greatly reduced, and the vinum ipecacuanhæ should now be given. The general restlessness will be much relieved by immersing the whole body in a warm-bath, which should not be employed at so high a temperature as when used for its counter-irritant action. At the same time attention must be paid to support the child's strength, by veal-broth, arrowroot, or other nutritious diet.

After the acute symptoms of bronchitis have been subdued, the subsequent convalescence of the patient is often protracted by the continuance of cough and wheezing respiration; symptoms which on a very slight cause are apt again to put on the more serious characters of the acute disease. In this chronic stage, a general tonic plan of treatment must be adopted, while at the same time much benefit will often be obtained by the employment of a stimulating liniment to the chest. The extract of bark is an extremely useful tonic, especially in cases where there exists any tendency to diarrhœa; while the wheezing is often relieved by the administration of an emetic of ipecacuanha every night. If the secretion in the bronchi be very abundant, the decoction of senega, with ammonia and tincture of squills, is often superior to any other medicine. If the bronchitis have supervened during dentition, you must not be surprised at slight relapses occurring just as each tooth approaches the gum. At other times, however, bronchitic symptoms continue for a long time, the expectoration being copious and puriform, while the child loses flesh, and the relations become not unnaturally apprehensive lest it should be phthisical.

With reference to antimony, it is while the emetic action of the remedy continues that you may hope for much from its employment; while you must be careful not to persevere in its use when the livid face and faltering pulse show that the aeration of the blood is nowhere duly carried on. A blister to the chest, and the stimulant expectorants, as ammonia and senega, may now be given, while the attempt may be made, by emetics of squills and ipecacuanha, to unload the bronchi at intervals of four or six hours. These are the cases, however, in which if you do not get the better of the disease at first, your subsequent remedies will probably be too tardy to overtake it.

Medical Gazette, Dec. 3, 1847, *p.* 959.

43.—ON LOBULAR PNEUMONIA.

By Dr. C. West.

[Dr. West recapitulates the history of this disease by stating that it was long ago observed that infants and children under five years old died with many of the symptoms of pneumonia, and that the lungs presented peculiar morbid appearances; but similar appearances were found in children who, during lifetime, had presented no symptoms of pneumonia; hence, it was assumed that inflammation of the lungs was a very frequent accompaniment of almost all the diseases of infancy and early childhood, that it was often *latent*, and that it gave rise to alterations in the lung very different from those which it occasioned in the adult. These alterations are thus stated by Dr. West:]

One of the most remarkable peculiarities of this supposed infantile pneumonia led to its receiving the appellation of *lobular pneumonia*, as expressive of the fact, that it did not attack a large tract of lung, or the whole of a lobe at one time, but that it affected isolated lobules, which might be seen of a dark colour, solid, often depressed below the surrounding parts, and sinking in water if detached from the healthy tissue in the midst of which they were situated. Sometimes the affection was strictly limited to a single lobule, the boundaries of which could be exactly traced; and though it oftener happened that a cluster of lobules was thus hard, and dark, and solid, still there was no gradual shading off from the darker to the lighter parts, so that it was evident that in whatever way the disease extended, at any rate it did not advance by mere continuity of tissue. Sometimes almost the whole of one lobe was thus affected, a few lobules only still retaining a healthy aspect, and crepitating under the finger, and it often happened that the bronchi leading to it were full of mucus or pus, while at other times there was marked congestion of the lung, and in the midst of the congested tissue were two or three solid hepatized patches. All these circumstances, as it may be conceived, variously modified the morbid appearances. In the last case the lobular pneumonia was thought to be becoming *generalized*, or, in other words, the inflammation originally limited to certain lobules was supposed to have begun to extend to the adjacent tissues, constituting a kind of transition-state between the lobular and lobar pneumonia. The lower edge of the different lobes, the whole of the middle lobe of the right lung, and often a very considerable portion or the whole of one or other lower lobe, were also sometimes found in a state to which, among other names, that of *carnification* was applied, on account of its close resemblance to a piece of muscular tissue. A portion of carnified lung showed the closest possible similarity to a lung that had been compressed by effusion into the pleura. It was dark, tough, solid, contained no air, presented a smooth surface when cut, yielded a small quantity of bloody serum when pressed, and, indeed, seemed almost like a piece of flesh, in all which respects it resembled a portion of lung hepatized by lobular pneumonia, and differed from the lung of the adult when that has been rendered solid by inflammation.

[The observations of two French pathologists have thrown great light upon the nature of this disease, which has really no inflammatory character at all.]

MM. Bailly and Legendre state as the result of their observations that the appearances to which the name of lobular pneumonia has commonly been given, are in reality produced by occlusion of the pulmonary vesicles. This occlusion may be the result either of their closure by the contractility of the lung, or of their parietes being compressed by an unusually congested state of the capillaries of the lung, or of the two causes combined. In either case they assure us that the inflation of the lung will remove the solidity of the lobules, and restore them almost, or quite, to a normal state.

[Dr. West gives the case of a little girl who had suffered from diarrhœa, but had no pulmonary affection, except dyspnœa, which came on three days before her death. The greater portion of the lungs was found dark, solid, and non-crepitant, and inflation restored the affected parts to the same state as the rest of the lungs.]

It is not possible to say why the child's inspiratory power grew too feeble to fill the lungs at one moment rather than at another, but few will doubt that it had become so just at the time when the dyspnœa occurred. A portion of the lung having become collapsed, the elastic ribs tended to render abortive any faint effort to draw in more air, and thus the vital flame went out for want of air to feed it.

[Sometimes, however, the occurrence of this state is long preceded by a defective performance of the respiratory function. A little girl who died at ten months old, and who had never been strong, was seized at the age of nine months with cough and emaciation.]

Four days before she died her breath suddenly became much oppressed, and her cough far more severe than it had been before. The dyspnœa rapidly increased, but her cough soon became less frequent. A few hours before her death her lips were quite livid, she was breathing from 80 to 86 times in the minute, the abdominal muscles acting most violently, but the chest being scarcely at all expanded. Auscultation detected nothing more than some rather mucous rale in the lungs.

After death no tubercle was found in any organ, but large portions of both lungs presented the undilated condition, which disappeared entirely on inflation. The bronchi were pale and contained very little mucus, but the right side of the heart was greatly distended with coagulated blood, which its thin, pale, and flaccid substance had evidently been unequal to propel with the requisite vigour.

The imperfect respiration had here for some time manifested itself; the vital powers had long been feeble; nutrition had been ill performed, and the heart itself had shared in the general feebleness, till at length air ceased to permeate a large extent of the pulmonary substance, and the child died for want of air to produce the requisite changes in the blood.

In both of these cases the lung collapsed because the inspiratory powers were too feeble to fill the minuter vesicles with air. The result is the same if the obstacle be increased as if the power be diminished, and hence the supervention of this state of lung becomes one of the most perilous, while it is one of the most frequent complications of infantile bronchitis. A little girl, previously quite healthy, was seized when ten months old with symptoms of acute bronchitis, a suffocative cough returning in paroxysms, and sometimes followed by the rejection of a muco-purulent fluid. The symptoms throughout did not seem to allow of depletion, but ammonia, with decoction of senega and tincture of squills, and other expectorants of a stimulating kind, were given with temporary amendment. The child did not, however, appear to have undergone any marked change, either for better or worse, except that she had certainly lost both flesh and strength, when coldness, faintness, and exceedingly laboured respiration, suddenly came on, under which symptoms she died in the course of twenty-four hours.

A few recent adhesions were found on each side of the chest, between the costal and pulmonary pleura. The trachea contained a large quantity of muco-purulent matter, and the same secretion abounded in the bronchial tubes, many of which were filled by it, while nowhere did air-bubbles appear intermixed with it. There was some congestion of both lungs, especially posteriorly; the upper and posterior part of the upper lobe of the right lung, the whole of the middle lobe, and the posterior part and lower edge of the lower lobe, were dark, solid, non-crepitant, and depressed below the adjacent tissue. The same state existed in the whole inferior third of the upper lobe, and the lower edge of the lower lobe of the left lung. On inflating the lung, most of these parts were restored to a perfectly natural condition, but some patches still remained less dilated than the others, and some of the darker, almost violet-coloured, portions of the lower lobes appeared but little affected by it.

In the course of his investigations on the structure of the lung, Sir E. Home ascertained that during the momentary distention of the air-cells in respiration, an interruption is produced between the arterial and venous circulation in the lungs; the blood being carried no further than the small arterial branches surrounding the air-cells. Now, MM. Bailly and Legendre conceive that, on the other hand, a distended or congested state of the pulmonary capillaries may compress the air-cells, and reduce them to the same collapsed condition as sometimes takes place from a mere want of inspiratory power. This theory, too, I believe to have in it a large measure of correctness, and it is probable that the occurrence of this condition is due to a congested state of the vessels in many cases in which the accumulation of secretion in the air-tubes is not so considerable as to render them impervious to air, and in which long-continued illness has not exhausted the strength and thus impaired the inspiratory power. It is thus, that in some cases of hooping-cough, where yet perhaps the quantity of fluid in the bronchi is not very considerable, we find after death a generally congested state of the lungs, and in the midst of the congested tissue, patches, more or less extensive, of a dark colour and solid texture, impermeable to air, but still admitting it, though perhaps not freely, on forcible inflation of the bronchi.

[A similar pathological state may exist in adults. Dr. Bailly has met with three cases, occurring in patients who died of exhaustion in fever. Dr. West tells us that,]

In two cases extreme dyspnœa occurred some days previous to death, but though the chest lost its resonance in the situation of the affected parts of the lung, and the breathing there was deficient, yet the minute crepitation of pneumonia was not detected in either case, but merely some large mucous râle. In addition to extensive disease which in each instance existed in the intestines, this collapsed condition of portions of the lung was found; unconnected with any disease of those organs in one of the cases, combined with the effusion of tenacious mucus in the bronchi leading towards the collapsed portion in a second, and associated with true pneumonia and a state of red or yellow hepatization of other parts in a third. In short, the three cases afford examples of the three distinct conditions under which we have noticed this occurrence in the child: the first being an example of collapse of the lung, the result of simple debility; the second illustrating its occurrence in connection with obstruction to the free admission of air into the lung; and the third showing it in combination with a congested state of the organ.

[Dr. West says that whenever the power of the inspiratory muscles is much diminished, there is a tendency to the supervention of this state, and that this does occur in old age. He observes:]

The term second childhood is not a mere figure of speech, expressive solely of the decay of the mental powers, by which the evening of life is obscured and made like the twilight of the mind in early infancy, but it is in many points the expression of a physical truth. Thus, as old age creeps on, and the nutrition is no longer adequate to supply the waste, the respiration loses the character which it presented in the adult, and the extremes of life in this respect present resemblance to each other. The muscles of the chest are no longer strong enough to dilate it fully, the diaphragm becomes, as it was in early infancy, the principal inspiratory muscle, and the vertical diameter of the thorax is that in which its chief enlargement takes place. The ear applied to the chest no longer detects the puerile breathing of youth, nor the clear vesicular murmur of manhood, but the respiration is coarser, sometimes almost bronchial. There is not, as in infancy, occasion for more rapid breathing to maintain the high activity of the vital processes, but the worn-out machinery needs be put in motion more frequently than in the adult, in order to obtain oxygen enough to support existence.

Medical Gazette, Nov. 5, 1847, *p.* 781.

Treatment of Pneumonia in Children.—[In idiopathic pneumonia, occurring in previously healthy children, depletion is as important a remedy as in the adult: and so also is antimony. Upon this subject, Dr. West says:]

In the treatment of the pneumonia of the adult we are accustomed to follow up the advantages gained by depletion by the administration of *tartar emetic*, and, under proper restrictions, the remedy is no less valuable in early life. Given in doses of one-eighth of a grain every ten minutes till vomiting is produced in the case of a child of two years old, and continued every hour or two hours afterwards for a period of twenty-four or thirty-six hours, it subdues the fever and abates the dyspnœa in a most remarkable manner, often rendering a repetition of depletion unnecessary, and sometimes speedily removing all signs of the disease. It is not safe, however, in the great majority of cases, to place our dependence entirely on the administration of antimony. In cases of secondary pneumonia, especially if the affection of the parenchyma were preceded by well-marked bronchitic symptoms, antimony may sometimes be given at once without having recourse to the abstraction of blood previously, but, in pure idiopathic pneumonia, depletion either general or local ought almost always to precede its use. When antimony does good it generally gives an earnest of that good within a few hours from its first administration, and the production of some sensible effect, such as vomiting or very decided nausea, has appeared to me to be a condition of its utility; unlike what we observe in the adult, in whom the good results which it produces are sometimes independent of any appreciable influence on the general condition of the patient. When once complete tolerance of the medicine has been established, our subsequent conduct must be determined by the results of auscultation. Should that inform us that the physical condition of the lung has greatly improved, as well as the general state of the patient, the use of the remedy may be persevered in at somewhat longer intervals. If the signs of inflammation be advancing, and are perceptible in portions of lung previously free from disease, mercury must be employed, which may be combined with small doses of antimony, while large doses of that remedy may still be given to combat any sudden increase of fever or dyspnœa that may chance to supervene. If, notwithstanding a manifest diminution of the fever and reduction of the dyspnœa, bronchial breathing should have become distinctly audible, mercurials must at once be substituted for the antimony; and the existence in any case of extensive or well marked bronchial respiration should be regarded as of itself contraindicating the antimonial plan of treatment. It is hardly necessary to state, that it is not my intention to say, that after the supervention of bronchial respiration, antimony ought never to be given, but only that it should not be employed except in small doses and in combination with other remedies.

In cases where the symptoms do not set in with such violence as to indicate the necessity for very large doses of antimony, or in which the disease has passed that stage when antimony so given is likely to be beneficial, *mercurials* may be used with great advantage. In cases of the former kind, from two-thirds of a grain to a grain of calomel combined with gr. ij. or gr. iij. of James's powder, may be given every six hours to a child two years old. If the case be of a graver kind, and bronchial breathing has become perceptible notwithstanding depletion and the administration of tartar emetic, the calomel must be given more frequently, as every four or three hours, combined with small doses of Dover's powder and tartar emetic, if the child be not so depressed as to render the use of the latter medicine inexpedient. Sometimes the combination of antimony with the mercurial is at first well borne, but afterwards it becomes expedient to discontinue it on account of the sickness that it sometimes produces, or on account of the debility of the patient. The diarrhœa which the calomel excites may usually be checked by increasing the dose of the Dover's powder. There are some troublesome cases, however, in which the stomach or bowels are so irritable that scarcely any medicine can be borne, and in them, as well as in cases of neglected pneumonia in which the proper time for active treatment has been allowed to pass by and and the child has become exhausted, while a large extent of lung is impervious to air, much benefit sometimes follows the persevering use of mercurial inunction. In infants and children under five years of age, the gums hardly ever become affected by mercury, even though most energetically employed, and it has never yet occurred to me to meet with an instance of profuse salivation, or dangerous ulceration of the gums. Such accidents, however, do now and then occur, and have been known to terminate in fatal gangrene of the cheek, or necrosis of the jaw. On this account, therefore, you must watch the condition of the gums in infants and children to whom you are administering mercury,' just as you would do in the case of the adult, and diminish or discontinue the remedy on the first indication of their being affected.

No point in the management of the disease is more difficult than the seizing the exact moment when the employment of stimulants becomes necessary; and no general rule can be laid down for regulating their use. If, however, the patient were beginning to be much purged, if the respiration were growing more laboured and irregular, though diminished in frequency, and if the pulse were becoming more frequent, and above all smaller and smaller, it is high time to resort to their use. Wine is as indispensable in such cases in the pneumonia of the child as in that of the adult, and it may be necessary to give it even to infants at the breast. Ammonia may also be advantageously administered in this stage of the disease, either in a mixture with the decoction of senega, or dissolved in milk, which conceals its disagreeable pungency better than any other vehicle. If diarrhœa do not exist, strong beef-tea or veal-broth is the best form in which nutriment can be given; but if the bowels be relaxed, arrow-root, or the *decoction blanche* of the French hospitals, should be substituted for it.

In conclusion, it may be well to offer a caution with reference to the employment of *blisters*,—a measure to which we often have recourse with advantage during the resolution of pneumonia in the adult, but which, as a general rule, is not advisable in young children whose lungs have been solidified by the disease. Stimulating liniments may be employed with advantage: they produce very evident good, and are unattended by the risk that always accompanies making a breach of the surface in a young child exhausted by previous illness. The risk of such sores taking on an unhealthy character appears to be greater after inflammation of the lungs than after almost any other disease; and it may be added that the risk is still greater in those cases of secondary pneumonia that supervene on measles.

Medical Gazette, Dec. 17, 1847, *p.* 1048.

41.—ON THE TREATMENT OF PLEURISY AND PNEUMONIA.

By G. J. Guthrie, Esq , F.R.S., &c.

[Speaking of the importance of bloodletting in pleurisy and pneumonia, Mr. Guthrie says:—]

I know no fact more important, and none which my experience has so amply confirmed, in opposition to the opinions commonly entertained on this subject. In young people, the bleeding should be repeated until the desired object is effected; and the quantity required to be drawn in inflammations, particularly after injuries, is often very great. It is almost a question, in some cases, whether the patient should be allowed to die of the disease, or from the loss of blood. Dr. Watson reports in his lecture "that the late Dr. Gregory, of Edinburgh, who had northern constitutions to deal with, was in the habit of saying, that, provided he was called early to a case of pneumonia, he would be contented to dispense with all other aids than those of a lancet and water-gruel." It was said that "he used to bleed to the verge of convulsions, but that his colleague, Dr. Rutherford, seldom went beyond three bleedings, and generally accomplished his object by two, judiciously timed and regulated. His patients recovered quickly: Dr. Gregory's very slowly." I have some doubts of the accuracy of this statement. Dr. Gregory, perhaps, saved the lives of persons who would have died under Dr. Rutherford; and their recovery was, of course, effected slowly. If it were otherwise, all that can be said is, that Dr. Gregory was a bad practitioner, who repeated his bleeding without paying attention to the presence or absence of those symptoms which rendered them necessary, or their repetition unadvisable. The aphorism of Laennec, on this point, should never be forgotten:—"Convalesence is rapid in proportion as the inflammation is of a small extent, and has been early subdued." As the first stage of pneumonia only lasts from twelve hours to three days before it passes into the second, and the second from one day to three before matter begins to be deposited, no time is to be lost to prevent these evils taking place, if the patient is to be saved without incurring a risk, from which few escape with health, even if life be ultimately saved. Bleeding in inflammation of the pleura, in young and healthy persons, should, therefore, be effected in a very determined manner, and with an unsparing hand, until an impression is made on the system—until the pain and the difficulty of breathing are removed—until the patient can draw a full breath, or faints; and the operation should be repeated, from time to time, every three or four hours, according to the intensity of the recurrence, or the persistence of the essential symptoms. The pulse does not often indicate the extent or severity of the inflammation, although it often expresses the amount of constitutional irritability of the person. It is sometimes exceedingly illusory as a guide, and is never to be depended upon in the earlier stages of disease, when accompanied by pain and great oppression of breathing. In the latter stages, the dicta of Laennec should be strictly attended to. He says:—"Whenever the pulsations of the heart are proportionally much stronger than those of the arteries, we may bleed without fear, and with the certainty of finding the pulse rise; but if the heart and pulse are both weak, the abstraction of blood will almost always occasion complete prostation of strength;" a remark of the greatest practical value, and one which should never be forgotten. In healthy young persons, in the acute stages of disease, a large and successful bloodletting is usually followed by an augmentation of the size of the pulse, and oftentimes by a diminution of its frequency.

In the year 1801, I found myself, not seventeen years of age, in charge of a regiment of infantry, on the top of the Berry Head, the outermost point of Torbay. The men were soon attacked by pneumonia. I had been taught the practice of physic in London—had followed among other avocations, the late Drs. Rowley and Hooper for three years, and, in consonance with their views, bled my patients three or four times in the first four-eight hours. I first drew sixteen ounces, then fourteen, then twelve, then abstracted, as the complaint continued, eight ounces; gave tartar emetic, so as to keep up nausea; then calomel, antimony, and opium, and lost my patients. True also to the precepts I had learned, I examined the bodies of them all, and found that they had lived to what is now called the third stage of pneumonia, combined in almost all with pleuritis, with effusion, and the formation of false membranes. The disease was essentially a pleuro-pneumonia, varying in different degrees, as the pleura or the lungs were principally affected. Discomfited by my failures, I reconsidered every case, and saw that, however systematically I had acted, the disease had not been arrested in any one of them. In fact enough had not been done. Recollecting what I had been told of northern constitutions, and of country practice, I determined that in future they should die of the bleeding, and not from excess of inflammation. I then took away on each occasion, as much more blood;

my sixteen ounces became from twenty to thirty. It would not do. I arrested the rapid course of the disease, but did not effectively subdue it. It was evident that, to succeed, I must place no limit to the abstraction of blood in the first instance, but the decided incapability of bearing its further loss. The men were all young, and in high health; the winds were sharp and cold at night; and smuggled gin was cheap, strong, and plentiful. I, therefore, bled every man when he came into the hospital, until he fainted, and repeated it every four hours, or even oftener, as long as pain or difficulty of breathing remained; and they, sooner or later, all recovered. Every one, however, had taken alarm. Some said I had killed my patients with physic—others, that I was now bleeding them to death; and the officer commanding had determined on writing to London to ask for a better or more experienced doctor—as I afterwards learned—if another death was reported on the following morning. It did not occur, and I soon became in good repute.

[After bleeding, tartar emetic is the best remedy in pneumonia. It is to be given in doses of half a grain or a grain every two hours, or as it is tolerated, and may be increased to 12 or 20 grains a day with advantage. But when the pneumonia is from the first combined with irritation of the mucous membrane of the bowels, or abdominal tenderness, tartar emetic is of doubtful utility. In the stages of hepatization and infiltration, mercury comes to be of more value than antimony; as it is also in pleurisy. It must be given to affect the gums,—three grains of calomel, with a third or half a grain of opium, every second or third hour.*

Blisters are not useful in the acute stage of inflammation of the chest. They are indicated, however, when the pulse is becoming weak and there is great dyspnœa; or when the disease is becoming chronic.]

Medical Times, Feb. 19, 1848, *p.* 338.

45.—*On Acute Œdema of the Lungs.*—By Dr. C. West.—It occasionally happens that children are attacked with intense dyspnœa, and other symptoms of disorder of the respiratory organs, which terminate rapidly in death; while it is discovered, on an examination of the body, that the thoracic viscera generally are free from disease, but that the cellular tissue of the lungs is loaded with serous fluid.

This *œdema of the lungs*, however, though it sometimes destroys life very speedily, is seldom, if ever, a purely idiopathic affection, but occurs generally as one of the complications of that acute anasarca which not unfrequently succeeds to scarlatina, and even then is not of common occurrence.

[If relief is not afforded the dyspnœa increases, and death may take place suddenly within twenty-four hours: if, however, the approach of the disease has been gradual, the dyspnœa increasing in paroxysms, death may not ensue for five or six days. As to the means to be used, Dr. West observes :—]

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* [One-sixteenth of a grain every quarter of an hour will salivate easily in twenty-four hours. Ed.]

In the treatment of any case in which the symptoms just enumerated come on, free venesection affords most remarkable and almost immediate relief, and whenever it is practicable is much to be preferred to the most abundant depletion by means of leeches applied to the neighbourhood of the heart. After depletion, large doses of tartar emetic should be given, since there is no other remedy that so speedily or effectually reduces the urgent dyspnœa. In the subsequent management of the case just such remedies are required as would be best calculated to relieve the general dropsy, and as that diminishes, the œdema of the lungs will likewise diminish and disappear.

Sometimes you may meet with cases in which the coldness of the extremities and the great lividity of the surface seem to forbid depletion. Such an instance I once saw:—the patient was a little girl about nine years old, in whom all the symptoms had come on very suddenly a few hours before I saw her, and who appeared almost dying at the time of my visit. I applied a large mustard-poultice over her chest, gave her a draught containing a large dose of nitrous ether, and repeated it every two hours. In the course of eight or ten hours, she was sufficiently rallied to bear venesection, which was followed by most marked amendment, and in a few days her recovery was complete.

Medical Gazette, Dec. 31, 1847, *p,* 1132.

46.—*Chloroform in Spasmodic Asthma.*—By B. Chandler, Esq.—[Mr. Chandler's patient, a lady fifty-six years of age, had been subject for twenty years to attacks of spasmodic asthma, for the relief of which "the resources of the Pharmacopœia had been exhausted in vain." On Dec. 6th, having had the prevailing influenza, she was attacked by her old complaint, extreme dyspnœa, with great sense of constriction, and acute darting pains through the chest and epigastric region. Mr. Chandler, resolving to try chloroform, says,—]

I accordingly poured half a drachm on a sponge, hollowed to fit the mouth and nostrils, and held it at first close to, but not touching the face. In less than half a minute she became excited, waving the arm about, and uttering incoherent expressions, accompanied with loud hysterical laughter: her prevailing idea seemed to be that she was "riding on a moonbeam." I then placed the sponge in contact with the face, when the limbs gradually relaxed, the arms dropping on the bed, quivering of the eye-lids and twitching of the muscles of the face took place, and she fell back on the pillow, drawing deep and prolonged inspirations, between each of which, perhaps, eight could be counted. I now withdrew the sponge, opening the curtains to admit air. Respiration gradually became more regular, and she lay without motion, the body well thrown back on the bed, not the slightest vestige of spasm remaining. This state continued until four o'clock, the patient apparently half sleeping, but conscious of what was passing in the room, when she sat up and took some food, describing her sensations as having been exceedingly pleasurable. Shortly afterwards she enjoyed a quiet sleep of some hours' duration, and the following morning she was quite quiet, no return of spasm, and no ill effect from the inhalation; she is now comparatively well. I tried the vapour of sulphuric ether in this case, some time ago, not only without success, but with much increase of the sufferings of the patient.

Medical Gazette, Dec. 24, 1847, *p.* 1105.

47.—*Aphonia Cured by Inhalation of Benzoin Fumes.*—[A lady, who had never been able to speak above a whisper for more than twelve years, the larynx at the same time appearing to be quite healthy, was advised to inhale the fumes of benzoin burnt upon a card. After a most persevering continuance of the remedy for nearly four months, she spoke in a good laryngeal tone, not sweet indeed, but tolerably strong.]

The fumigating cards are made in this manner:—A sheet of thick white blotting paper is brushed over with a saturated solution of nitre until it is thoroughly wet, and when dry the compound tincture of benzoin is applied in the same manner. Each of these applications is repeated more than once if necessary. When thoroughly dry the paper is cut into slips, three inches long, by one and a quarter wide. One of these being lighted at the corner, burns without flame like tinder, emitting a dense white smoke, consisting principally of benzoin acid and some particles of nitre, which are thrown off by the crepitation of the crystals. When used for remedial purposes, this smoke should be inhaled by holding the head over the burning card.

A young woman suffered from a common catarrhal sore throat, which lasted rather longer than usual. About a fortnight afterwards I was consulted, and found all the acute symptoms had subsided. She now merely experienced a defect in the power of speaking in a laryngeal voice, and all her words were uttered in a whisper. I recommended her every night inhaling the smoke of a fumigating paper. The very morning after the first time of doing so, a great improvement had taken place, whilst by a few days' continuance of the treatment, she was enabled to speak in a natural tone.

Provincial Medical and Surgical Journal, March 22, 1848, *p.* 161.

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ORGANS OF DIGESTION.

48.—ON DIPHTHERITE.

By Dr. Coley, &c.

[Dr. Coley, at a meeting of the Westminster Medical Society, related the case of a child, a year and ten months old, in which inflammation of the fauces with effusion of false membrane, followed the retrocession of measles. Nitric acid was applied to the the parts, and shortly afterwards tracheotomy performed, and a grain of calomel ordered every two hours. On the fourth day afterwards, exhaustion coming on, the calomel was discontinued, and stimulants given; but the child died in about forty-eight hours. About twenty-four grains of calomel had been taken. Examination showed the entire absence of inflammation, but there was effusion into the pleura and pericardium: death was supposed to have taken place from exhaustion. In the discussion which followed Dr. Coley's account of the case,—]

Mr. Hird said that he had found great benefit in cases of low inflammation from the use of alkalies, as liquor potassæ; he approved of tracheotomy as superior to laryngotomy, and its performance by the knife rather than by a trocar.

Dr. Webster said that at the Congrès Sciéntifique in Paris, this summer, M. Bretonneau spoke highly of the use of hydrochloric acid in this disease, also of alum applied locally. He recommended calomel, in the same way as it was exhibited by Dr. Coley.

Dr. Coley had performed tracheotomy several times in the country, but, from a prejudice against it, it had been postponed till a late period. He had found it very unsuccessful from previous extension of the disease to the lungs.

Dr. Murphy observed that these cases generally occurred in persons of very reduced constitutions, and asked what treatment would prevent it. He thought the operation increased the risk of the child. The case was of an erysipelatous nature, and he should suppose the treatment ought to be bark and wine.

Dr. Webster considered that calomel might be given in large doses in dry weather, but in warm weather, with a south-west wind, and the barometer low, the child would not bear so much.

Dr. Ayres considered that children bore large single doses of calomel well, but not repeated doses. Salivation diminished the amount of fibrine in the blood; hence, probably, its influence on these diseases.

Dr. Coley said that a second case of diphtherite occurred in the same family, which was cured by a smaller amount of calomel, about fourteen or fifteen grains, he supposed; this case was treated early in its course. In answer to a question, he said, that he did not give tartar emetic, as the child was not equal to bear it.

Mr. Hird said, that diphtherite was epidemic at present. It was a disease allied to erysipelas. He objected to calomel, as not controlling disease of mucous membranes so much as those of other tissues.

[We are rather surprised that no mention is here made of the application of a strong solution of crystallized nitrate of silver (℈ij. to ℥i,) as recommended by Dr. Green in Retrospect, Vol. XVI, p. 118, and which we have found both safe and efficacious.]

Lancet, Nov. 27, 1847, p. 576.

49.—*On Chronic Enlargement of the Tonsils.*—By Dr. Naudin.—Dr. Naudin, instead of producing a slow, progressive destruction of the tonsils, aims at their preservation, and for this purpose employs a solution of nitrate of silver, three grains to one ounce of water, increasing the strength by three grains up to two drachms of the nitrate, in the same quantity of water, and also applying the solid caustic to the surface of those hollows which usually exist in such tonsils, so that all parts may be equally affected. During one sitting the tonsils are painted twice or thrice; the mouth is then well washed with water. This cauterization must be repeated every two or three weeks until the tonsils are restored to their normal size, and then gradually discontinued; it produces no ill consequences, and even children speedily return to their play. Should the parts become accustomed to the caustic, it must either be discontinued for a time, or another substituted, as Lugol's diluted solution of iodine. In two cases related by our author, the nitrate alone was employed. Both, aged thirteen and fourteen, had been affected for years, and were cured in two and a half to three months; in a third case—that of a girl aged eleven—the disease was extensive and obstinate, requiring four months' use of the caustic, besides the use of hyd. pot. and iodine internally, and as an ointment. In all these cases no return has been observed after the lapse of years, and the previous disposition to inflammation of the tonsils has been extinguished.—*Edinburgh Monthly Journal.*

Lancet, Jan. 29, 1848, p. 127.

50.—*A New Diagnostic of Impaired Digestion.*—By M. Bean, Physician to the Hotel Dieu.—[This consists in a tranverse furrow across the thumb nails, resulting from a thinning in the substance of the nail. M. Bean attaches great importance to this sign, as determining, approximatively, the duration of the disease. For this purpose we are to measure the distance which separates the furrow from the root of the nail, remembering that the nail grows at the rate of one-millimetre [one twenty-sixth of an inch) in the course of a week.]

Lancet, Jan. 15, 1848, p. 76.

51.—*On the Treatment of Chronic Gastralgia.*—By M. Valleix. —[Chronic gastralgia, says M. Valleix, most frequently arises after acute diseases, from our keeping the patient too long upon low diet.]

In the treatment of chronic gastralgia, M. Valleix has derived the greatest benefit from the employment of *small doses of acetate of morphia.* The medicine is not a new one in this disease; but M. Valleix has advantageously modified the usual mode of its administration. Thus, instead of giving it before, he prescribes it immediately after a meal; and in this way he has relieved cases which had resisted all other treatment. A very well-marked one of this description is detailed. M. Valleix orders one grain of the acetate inthirty drachms of distilled water, and nine drachms of syrup, and directs a teaspoonful to be taken immediately after each meal. Under the use of these small doses, the bowels, so far from becoming constipated, are better regulated.—*Revue Médico-Chirurgicale,* tom. ii. p. 100; from the *Bulletin de Thérapeutique.*

British and Foreign Medico-Chirurgical Review, April 1848, *p.* 275.

52—ON THE NATURE AND TREATMENT OF ASIATIC CHOLERA.

By Dr. C. W. Bell, K.L.S., Physician to the Manchester Infirmary; late Physician to H. M. Embassy in Persia.

[The following is Dr. Bell's opinion of the nature of cholera. He says:]

1st. With many able authors, I hold cholera to be merely a form of ague; and, in addition, I maintain its type to be quotidian.

To determine the nature of ague, therefore, if this position be true, is to determine both the nature and treatment of cholera. To do this, it is necessary to have a clear conception of what is really essential in an ague.

In the first place, I may venture to premise that I have enjoyed very ample opportunity of seeing ague in every variety of type and degree of severity; yet I have never seen a single attack of any kind of ague in which the whole cycle of its stages—that is, in which each individual paroxysm—was not completed within twenty-four hours. I have often witnessed several paroxysms completed within that time, but never one incomplete; and I have never met with a description of an ague in which the paroxysm exceeded twenty-four hours in duration, except where the author would appear to have considered Asiatic cholera to be such an ague.

2dly. The congestive or cold stage is the only essential which is never wanting in ague. It may be severe or slight, partial or general,—be with or without shivering; but in ague, and every disease allied to it, such as masked and misplaced agues, as they are called, periodical headache, and neuralgia, and all the remittent fevers I have yet met with, this stage is never wanting, though sometimes obscure. The second, or hot stage, may, or may not occur; reaction may, and often does, take place quietly, and without fever, and unsucceeded by a period of relaxation or sweating. This condition frequently occurs in what is called the fortnight ague—a form with which all who served in the late campaigns in Scinde are well acquainted, where the shivering is severe and hysterical, but where the febrile and sweating stages are often entirely wanting; and yet this is the form most remarkable in its periodicity, and in its return, for one or more days, every fortnight, just previous to the lunar changes.

In other forms, more especially the quartan, all three stages generally prove exceedingly severe, and in this form the period of relaxation may perhaps pass the twenty-fourth hour from the accession, but I have not seen it do so, and I should be inclined to define ague as a paroxysm of congestion of the internal veins, subsiding within twenty-four hours, and often followed by febrile action and relaxation of the capillaries. It appears to consist in a gradual change in the action of the extreme capillaries, and apparent constriction of them, by which the blood is rapidly driven inward upon the great veins. When this has reached to such a point as to oppress the action of the heart, yawning first, and then shivering, or a sense of suffocation and pain in the præcordia, are the indications of oppressed circulation, and of the commencing effort of the heart to overcome the mass of blood which is stifling it. If, by the application of tourniquets to the limbs, or by bleeding, part of the blood which is rushing from the extremities to increase this congestion is prevented from reaching the great veins, —the heart, excited to increased action, is enabled by this relief more quickly to overcome the obstruction and restore the balance of the circulation, and the paroxysm passes off. If not thus mechanically aided, the heart, after a severe struggle to maintain the circulation during the period of constriction, is at length relieved, by this nervous disturbance or spasm of the capillary circulation passing off of itself, and then the heart and arteries, so long excited by the struggle, maintain for a time their increased action after the obstruction in the capillaries is removed, and produce apparent febrile action. Presently this excitement subsides, the vessels become relaxed, and sweat succeeds. The vessels continue in this state for a longer or shorter period, according to circumstances, till they at length recover their ordinary tone and action in the intermission. This fever, however, is not fever properly so called, but reaction; and the sweating not critical or essential, but relaxation. The cold stage is alone essential, and is the physiological cause of the subsequent stages.

[Dr. Bell's opinion was formed from his experience of a series of epidemics which raged in Persia in 1842, when Dr. B. was attached to the embassy, and was in medical charge of the Persian army. He says:]

The first of these was dysentery; then a peculiar periodical disease, till then undescribed, attended with intense disturbance of the circulation and the nervous system: which also appears to have been observed at Strasburgh. Then came tropical remittent, then congestive ague: and this finally terminated in true cholera.

To this series of the diseases, I am indebted for being led—as I cannot but think I have been—by a species of natural analysis, and by easy transitions, to a clearer insight into the nature of the disease; and to a practice, unbiassed by a theory, and simply arising out of the process of accommodating my remedies to the changing type of disease: which then proved successful in every case I attended, where the feet had not already become warm, while the legs and body remained cold.

This is a symptom which my whole experience teaches me to consider as a sign of actual death. In this, most authors of experience bear me out, and I have invariably found that every interference with the patient who presented this fatal symptom only increased the spasms and suffering, and hastened the consummation.

Almost every intelligent author on this subject, has classed cholera with the cold fit of ague—as, indeed, the whole of its features render nearly inevitable; and viewing it in this light, the rationale and use of bleeding, as recommended by Mr. Bell and other authors, could not be better laid down than it is in his work on Cholera Asphyxia. Yet among these authors I have searched in vain for a single statement that cholera is—what I am satisfied it will invariably be found to be—a congestive ague of quotidian type. All whose works I have read consider it as, *in its whole course*, merely the cold fit of an ague, and that the fever which occasionally succeeds to it on recovery is the hot stage.

In my belief, no single paroxysm of ague of any kind ever occupied more than twenty-four hours in passing through all its stages, and, according to my experience, (whenever its progress is sufficiently slow to run that course) invariably completes an entire paroxysm within that period, consisting of the congestive or cold stage, and the remission. The stage of reaction which follows congestion can scarcely be said to exist in cholera, and the sweating stage, or stage of relaxation, is only occasionally perceptible, being so little marked as to be nearly undistinguishable from the short period of remission or intermission, but in every case of the epidemic which I had most opportunity of observing, there was invariably a diurnal remission and quotidian accession; and I am greatly inclined to believe this universal in all forms of cholera, where not prevented by previous death or cure.

The symptoms of these stages are so little marked as to require the most attentive observation to distinguish them, and until the opportunity shall present itself of actually looking for them, I do not expect to be credited, and all that I can hope for at present, from those most conversant with the disease, and who have not as yet entertained this view, is, that they will at least give it their consideration, and try to recollect whether in the more protracted cases that have fallen under their treatment, they have not observed that the patient, after tossing about for many hours in an agony of suffocation, seems at last exhausted, and after long jactitation and continuing to throw off every covering, he at last for a short period remains quiet and submits to the load of the bed-clothes. This temporary repose is in most cases almost the only symptom, except a more tranquil action of the heart, that marks the intermission, and forms the most obvious and almost the only guide to the essential part of the treatment of a severe case. In a very short time this period of comparative tranquillity ceases—the patient begins again to yawn, to throw up his arms like one bleeding to death, and in a few minutes more to toss about again, and show every symptom of suffocating agony.

These symptoms of the return of the congestive stage have, in the mass of my cases, appeared exactly twenty-four hours after the first accession.

[Dr. Bell further remarks upon the cold stage of cholera, or stage of "collapse" as it is termed, that it differs much from that state of the system to which the term collapse is ordinarily applied. He observes:]

Collapse, if it mean anything, surely means a sinking from the cessation of the power which supported the vital actions, but the more the condition so called in cholera is examined, the more, I am convinced, it will be found that it arises from an active cause controlling these powers; that, if collapse from sinking or hæmorrhage may be termed adynamic, we shall be forced to express that which occurs in cholera by the contradictory term dynamic; that it is an active, not a passive, condition of the capillary circulation. It is obvious that, if this distinction be not made by the practitioner, he will inevitably attempt to treat collapse in cholera on the same principles that he would adopt in an apparently similar condition of the system proceeding from a deficiency of action. It is true that both in adynamic collapse with sinking and syncope, and in that of cholera, which I have termed dynamic, there is diminished circulation and arterial action; but in the first the pulse is open, soft, and feeble, and unless proceeding from hæmorrhage, becoming generally slower, softer, and feebler, till it ceases; whereas in cholera it is contracted, small, and wiry, as long as it can be felt.

[But whatever name we may give to the cold stage of ague or cholera, it results from a peculiar condition of the capillary circulation to which Dr. Bell gives the term "*spasm*," using this term not to indicate a theory, but as being a convenient form of expression. This condition of spasm it is which, when confirmed puts a stop to secretion; a good example of this is found in the state of the tongue, which is always *free from fur*, pale and cold, in Asiatic, while it is as certainly loaded in English cholera. Another effect of this state of spasm is the diminished temperature of the body, which seems irremoveable by any external application of heat. As a proof that this coldness is "a product of action rather than an effect of the cessation of action," we find that when all action has ceased in death, the body becomes warmer, and the warmth commences, as death commences, in the feet. In summing up this part of the subject, Dr. Bell says:]

That the ordinary actions of the capillary circulation are put a stop to, or strangely altered, during the condition which we have termed spasm. That this spasm has a tendency of itself to relax in due time, and again to recur unless prevented by a change of action, induced either by natural or artificial means. And we have observed, that in consequence of this action the blood is driven inwardly from the extreme capillaries into the great interior veins, leaving the extremities bloodless and chilly. We shall now proceed to consider the effects of this derangement in the distribution of the circulating fluid.

The first effect or symptom of this overloading of the internal blood-vessels is pain at the præcordia and oppression of the heart, with congestion of the spleen and vessels around the stomach. In examining the comparative anatomy of these organs in the phocæ, the cetaceæ, and other diving animals, it is found that they are the means provided by nature temporarily to receive, as into a reservoir, the excess of venous blood which, unable to pass through the lungs during suspended respiration, would otherwise accumulate upon the right side of the heart and oppress its action. The spleen and neighbouring veins serve exactly the same purpose in man, though in a less degree, because less required. By their capability of receiving into their expanding and elastic structure a considerable quantity of blood without injury, and so withdrawing it temporarily from the circulation, these organs afford a means of obviating that oppression of the heart and injurious distension of the important secreting organs, which might otherwise prove fatal every time that such passing cause occurred to impede the circulation through the lungs, as a fit of choking or sneezing, or that a cold chill happened to drive the blood suddenly inwards from the skin upon the heart: when, however, this reservoir becomes filled to its utmost extent, as in ague, and the blood still continues to be poured inwards from the external veins, the spleen is no longer capable of acting as a safety valve, and the overflow then passing with great freedom through the portal vessels, distends and strains the cavæ and right auricle, choking and oppressing the action of the heart.

The ordinary symptom of reaction from this condition is shivering, but if the oppression be greater than the power of the heart can overcome, not shivering but pain in the region of the heart and spleen, gasping, and a sense of suffocation are induced, and these symptoms are often accompanied with sickness of stomach.

At the same time that the blood over-distends the cava and oppresses the heart, being still poured inwards from the extremities to which their well-valved veins permit no regurgitation, it is necessarily driven back from the gorged vessels upon all the internal venous branches unprovided with valves; the renal veins are distended, and the returning current of blood from the kidneys stopped; consequently a first effect or symptom of such congestion is the cessation of the secretion of urine, and the first urine passed on recovery from cholera is often mixed with serum and blood-globules. In like manner the hepatic circulation is oppressed, impending the secretion of bile; these two constitute the second class of mechanical effects or symptoms. At the same time another effect is produced by the same cause; the portal circulation, at first impeded by meeting the reflux from the vena cava, is presently reversed, and the blood is thrust back into the mesenteric veins, till it distends their extreme ramifications on the mucous membrane, where it finds a species of vent; for from this surface the repellant force squeezes out the fluid portion of the blood into the bowels, carrying with it the mucous epithelium, and constituting that serous or rice-water evacuation which is esteemed characteristic of cholera, but which has no title whatever to the name of secretion, or to be treated as such, being a mere exudation which is the very reverse of a vital action.

[These three then are obviously mechanical effects of the congestion, and manifest themselves in the form of symptoms, as:]

1st. Pain at the præcordia, sickness, oppression and struggling of the heart.
2d. Cessation of the secretions of bile and urine.
3d. Serous purging.

As all of these are the direct effect of too much blood being driven in upon the right side of the heart, it is not difficult to see that by diminishing the volume of this blood, their mechanical cause would be removed; and thus it is that the purging itself tends to relief, although less effectually than direct abstraction of blood, because only its fluid parts are thereby abstracted, leaving the bulk of it in a condition comparatively unfitted for circulation through its loss of serum.

But there are three things to be considered in attempting this mechanical relief by blood-letting:—

First, how? second, when? and third, the ultimate effect on the disease?

The answer to the first of these questions is simple enough; it must be done, if possible, by direct diminution of the mass of blood that distends the cava. To do this, however, from the vessels most oppressed, is impracticable from their situation, and we are therefore forced to attempt to fulfil this object indirectly by opening a vein in one of the extremities which is yet sending its tide to augment this congestion: this indirect abstraction of blood acts not only by relieving congestion mechanically in the great veins, but the renewed motion of the blood excites the general circulation by continuous sympathy, and, what is of more importance, it would appear that the bleeding exerts a direct effect in relaxing the capillary spasm. Some, in ignorance of the object of bleeding in cholera and ague, have opened an artery, as if it were their intention to cut off, instead of promoting, the small current of life that still circulates, but doing so has invariably induced fatal collapse.

The second question, as to time, is not so easily disposed of.

It has been said, that whenever blood has been got to flow with tolerable freedom the patient is safe. This is certainly not literally the case either in congestive ague or in cholera. In the first two cases which I witnessed of the former disease, unaware of its nature, and believing that I was treating acute dysentery, I bled freely, but, as it afterwards appeared, I did so in the hot stage, in which it was my misfortune first to see my patients. The bleeding was followed in a few minutes by the most sudden and fatal collapse, with every symptom of cholera. The following day, with the abundance of similar cases which it brought, showed me my error, and then the lancet, fatal to the first two patients by being used at a wrong time, saved hundreds when used *at the very commencement of the period of congestion;* and I am happy to say that in many thousand similar cases no such accident happened to me afterwards.

[Dr. Bell tells us that the native Persian practitioners bled, but generally with a fatal result, because they bled when reaction was commencing; and he thinks that when bleeding was found to be unsuccessful by the medical officers of the East India Company, it was from the same cause. Dr. B. proceeds to say:]

When the exudation from the bowels or skin is yet flowing freely, —for in different forms of the epidemic either symptom may predominate,—and when the heart is heard to be struggling in an extraordinary state of excitement, and in the active endeavour to overcome obstruction it is *churning* as if it would burst,—a sound difficult to describe, but once heard, never to be forgotten,—when, I would say, the sound of the heart conveys to the listener the impression that it is labouring with unabated vigor of reaction, the lancet cannot be used too promptly; but when the attack has continued for four or five hours,—when the purging has become less copious,—and when instead of manifesting a continuous struggle, the heart appears only to be roused up to reaction at intervals, when the natural warmth of the skin is a little more extended on the neck and chest, and the patient though still tossing uneasily, is not now in his previous agony, I would hold my hand, and trust to medicine for some hours to come; I would then wait until I observed him rest a little more quietly, and bear the weight of the bed-clothes for a time, and until the heart's action continued comparatively tranquil for half an hour or an hour; then, indeed, on the very first symptom of renewed distress, or even sooner, I would bleed without hesitation, till the thick tarry blood, that at the first is squeezed and kneaded from the arm with difficulty, flows freely from the orifice, and becomes changed to a fair florid hue.

[And in another place:]

All depends upon the period at which bleeding is resorted to. If early in the congestive stage, or just previous to its second accession, it is invariably successful; if just as the congestive stage is passing off, when the pulse begins to acquire a little power, it is invariably fatal.

[This fact Dr. Bell explains in the following manner. In the first stage the heart is excited to the utmost by distension of its cavities from behind, and opposition to its action by spasm of the capillaries in front; bleeding gives relief from the pressure *à tergo*, and probably aids in relaxing the spasm, while at the same time by relieving the congested state of the great secreting organs, it enlists their sympathies in support of the vital actions; and the power of the heart being unimpaired, it can now carry on the circulation with vigour. But in the second stage, the heart's energy is much exhausted, and its vital irritability impaired, by long-continued distension; and syncope and relapse will be the probable effects of bleeding. If then we cannot bleed, what are we to do? We must use those medicines which will invigorate and regulate the circulation generally, and control the tendency to periodical disturbance. Of these, *quinine* first suggests itself: it has been tried, and *failed.* Upon this subject, Dr. Bell says:]

I have found it fail in like manner when used alone in ague, but when combined with iron, * I have found it eminently curative in cholera; and although quite unable to explain the reason of this anomaly, I may perhaps be permitted to digress a little in order to illustrate the effect of this combination.

Much practice in the treatment of enlarged spleen, soon led me, contrary to what is advised in many English works of high authority, to regard calomel as an absolute poison in that disease, and the acquisition of Mr. Twining's valuable book on the Diseases of Bengal, informed me of the value of iron in its management. I found the routine treatment of the Calcutta Hospital advised by him, viz., purging with salts and sulphate of iron, combined with periodical bleeding, infinitely preferable to the French and American plan of giving large doses of quinine, but I did not think of combining the two methods, till it occurred to me to do so in the case of one of the gentlemen of the Russian embassy, who was attacked by a much more severe form of ague than I had before met with in Persia.

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* It is very remarkable how much the general use of iron as a medicine has increased in this country since the last visitation of Cholera. I conceive that this arises from a greater than previous tendency to local congestions; early in the century acute inflammations were much more frequent than now, and many of the fevers yielded only to free bleeding: the lancet was constantly in the hand of the practitioner; now its use in fever is almost obsolete.

Iron seems especially used for the purpose of facilitating the oxygenation of the blood, and enriching it as in chlorosis, and in aiding the action of a feeble heart, probably by its influence in causing the blood to pass more freely through the lungs, and thus diminishing the tendency to congestion. It is useful alike in menorrhagia and amenorrhœa, in congested kidney, spleen, and prostate, and in most nervous diseases, arising from feeble and deranged circulation, &c.—in fact, to combat the tendency to venous congestion, and as a corroborative and regulator of the circulation both general and local. It is the most direct opponent to mercury, the best cure for salivation, and certainly in my own experience in epidemic agues and remittents, including that known as gulf fever, (the terror of Europeans in the Persian gulf) iron has proved as beneficial as I have invariably found calomel pernicious.

[Dr. B., then, gives quinine as an anti-periodic, and iron as an anti-congestive. He says,—]

My ordinary treatment in cases of cholera was a wine glassful of a mixture composed of—

> ℞. Quinæ disulph. gr. xij. to ℈j.; ferri sulph. gr. ix.; acid. sulph. dilut. ♏xl.; aquæ puræ, Oiss;

repeated from quarter of an hour to every hour, according to circumstances.

I believe this and other watery fluids to be much more rapidly absorbed during the intervals of exudation than is generally imagined. I have generally found the first dose or two put a stop to vomiting. In those attacks which I have ventured to class along with cholera, where the exudation from the skin, or into the loose cellular tissue, took the place of that into the bowels, I added to the above mixture an ounce of Epsom salts, as a derivative.

With regard to diffusible stimulants, they are often successfully employed in the first moments of an attack, and immediately on the occurrence of the first purging, but not often after congestion is fully established: any one on listening to the heart in this stage, and hearing it labouring so vigorously, but in vain, against a force superior to its utmost power, will be convinced that it is impossible that increased stimulus can make it prevail. My own experience is totally against their use, unless in combination with bleeding, or in the very outset. I have satisfied myself by experiment that in the congestive stage each dose is attended with instantaneous increase of the congestion and exudation; besides, it would seem only probable that to stimulate still further the already over-excited heart can only tend the sooner to exhaust it, unless at the same time mechanical relief to the congestion be afforded. In the third stage, or remission, stimulants will probably again prove beneficial; but I have not latterly used them, and would leave their employment to be regulated by circumstances.

[Dr. Bell thinks that *opium* is likely to prove injurious in the treatment of cholera, by diminishing the sensibility (irritability?) of the heart. He disapproves even of the ordinary use of *calomel* while cholera prevails, and still more of its employment in this disease itself. As to *applications* he prefers *cold*, having tried heat extensively without any good result: he says,]

All the patient's desires are for cold, and considering spasm of the capillaries as the chief cause, cold applications ought to be a powerful means of removing this; but I have never had sufficient confidence to try the application of the wet sheet, having hitherto had reason to be satisfied with the practice I have already recommended: but many instances have come to my knowledge, where the application of cold water has been successful, without one equally convincing proof of the efficacy of the hot bath, or oven practice. I am well acquainted with three persons, who, after they had been laid out for dead, on being washed previous to interment in the open court-yard with water, to obtain which the ice had to be broken, recovered in consequence, and lived many years. I received last year from a friend in Persia, Lieut. Ferrier, a French officer, an account, which I think a little exaggerated, of his success in the treatment of cholera in Tehran, by keeping his patients immersed for several hours in a cold bath; and, only last week, I received from Erzeroon, in Turkey, a letter from our excellent consul, Mr. Brant, who states, that Dr. Dickson of that place was then curing more patients by frictions with snow and ice than by any other treatment.

The same practice is reported to have been the most effectual in Russia. I mention this not for the purpose of recommending it, but as the most recent intelligence, and in order that this, along with other methods, may be regarded in reference to the principle which I have been endeavouring to illustrate, that the cause is active,—that it is of temporary duration,—that it tends to recur, and that whatever the mode of treatment adopted, it must have reference to the cause of, the existence, and the effects of congestion, and to its remission and return.

In conclusion, I would beg to state, that even should all that has been advanced be considered mere unfounded hypothesis, I would still venture on the ground of experience to beg the attention of practitioners to a consideration of the rules attempted to be deduced from it, viz.:—

The use of quinine and iron in combination, very frequently; abstinence from the use of the lancet, except in the very commencement, while the heart's power is evidently unsubdued, or after the patient has had an interval of repose—(not sleep, for that never occurs in cholera):—and except in those two periods rather to abstain from the use of stimulants, which are extremely painful to the patient.

After hours have elapsed, I consider the practitioner more fortunate who fails altogether to obtain blood than he who draws four or five ounces, and unable to get more, binds up the arm: the first patient may recover; the other, though apparently the most promising subject, seldom will. I have often known it occur that where every effort to obtain blood has failed, the same veins have bled freely after the exhibition of several doses of quinine and iron.

At all times the use of the lancet requires the utmost determination; and when blood has once begun to trickle, no apparent cruelty must be shunned in order to get it to flow freely till its florid colour shows the circulation to have become fully re-established: for, if abandoned before this is effected, fatal collapse is almost certain to ensue.

[Upon another interesting point in the history of cholera, Dr. Bell observes,—]

The direct evidence in favour of non-contagion has always appeared to me infinitely to preponderate over that to the contrary; and I know none more conclusive than the fact of its penetrating the triple cordon sanitaire established by the Prussian Government on the Oder in 1831 at exactly the same rate (four German miles a day) that it proceeded at both before and after its encountering what was expected to prove so formidable a barrier to its progress.

Medical Gazettes, Nov. 5, 1847, p. 797, & Jan. 7 & 14, 1848. p.p 8 & 52.

[On this interesting subject we find recorded the opinions of several other gentlemen who have been placed in circumstances favourable to its study.

Mr. Thom's remarks are founded upon observation of the cholera as it occurred in Her Majesty's 86th regiment, in June, 1846. Mr. Thom states his opinion that the existence of a hot atmosphere loaded with moisture, and at the same time in a *stagnant* state, is a cause of cholera, independent of any chemical change which may have occurred in the air itself. He then proceeds to say,—]

With an increase of temperature and moisture, there is also an augmentation of the bulk, and diminution of the specific gravity, of the air; so that a volume which fills the lungs contains a proportionately less quantity of oxygen than it otherwise would do. This would be the case even in a dry hot air; and, in all probabibility, to this may be traced the origin of certain diseases peculiar to such a state—as the "apoplexy" of hot winds—and not to mere elevation of temperature acting on the skin. Now, the introduction of a large quantity of aqueous vapour, absolutely yielding no oxygen, into such an air, although it in some degree lowers the temperature, renders it even still more unfit for respiration, by its occupying a considerable proportion of each volume inhaled. From these phenomena, I calculate that, at the lowest rate, with the thermometer at 90. and dew-point at 83°, a given bulk of atmosphere contained one-eighth less oxygen during the month of June, than it did in January and February. In temperate regions, two pounds eight ounces of oxygen are daily consumed by the lungs: but, instead of this, only two pounds three ounces would have been inhaled at Kurrachee, even if the number of respirations per minute were as great in hot as in cold climates, which is not the case. We also know that the soldier's ration is the same at all seasons, and he consumes as much animal food in summer as in winter—ay, in an Indian summer, or Canadian winter—and that animal diet requires more oxygen than vegetable, to render it fit for assimilation. In India, during the hot season, the just balance between these necessaries of life is lost, and a tendency to morbid change must always exist in a more or less degree, according to the intensity of the pre-disposing and exciting causes.

Changes in the Blood dependent on the Climate.—Yet we admit that this is not *alone* sufficient to produce those death-blasts which pass over India in certain seasons, but that it is merely the first link in the chain of causation. The result is a carbonaceous state of the blood, diminished formation of fibrine and albuminous matters: while the crude matters from which these necessary elements are formed, require unusual energy of the system to throw them off. The liver acquires increased action to remove the carbon; while the skin, in consequence of the renal secretion being diminished in hot climates, has not only to carry off the fluid, albuminous, and saline parts of the blood, but the nitrogenized matters also.

That such a condition of the blood existed at Kurrachee in June, was evident in every case where it was examined, whether in cholera or other cases; nor is this new or unexpected, although an important fact. In men, previously sound in health, the immediate evils arising from this are, no doubt, very frequently averted by the adaptation of our functions to relieve nature in many ways that must ever elude our scrutiny. But it must be pregnant with danger, while extraneous or trifling sources of irritation must tend to produce open disease: and the preservation of health under such circumstances must depend on an uninterrupted activity in the hepatic and cutaneous excretions.

Congestion, along with Deteriorated Blood.—Let us suppose any sudden or unusual congestion to take place in a system already impregnated with so much grave, although latent, germs of disease: I mean simple congestion, unconnected with any specific poison inhaled by the lungs or received by contact. It is almost needless to observe that such a phenomenon would lead to the most dangerous and fatal results—such, I firmly believe, as our regiment experienced. I am not prepared to say that the altered function of some organ may not produce a deceased secretion, which may act as a deadly poison by getting into the blood, and be the immediate cause of death; all I contend for is, that even this is but a consequence or part of the series of morbid actions merging into cholera.

Congestion Fostered by Moist Air.—The next point which forces itself on our notice is the presence and agency of phenomena during and preceding cholera, which were eminently favourable to a morbid congestion of the circulating mass, whether previously deteriorated or not; these I consider to be undue moistures in the air, and a deficiency of the ordinary currents of winds: both being equally unfavourable to the process of evaporation.

The Air.—At the time when cholera existed, the dew-point was from 82 to 83°; every cubic foot of air contained twelve grains of aqueous vapour; and, had the external temperature been the same, all evaporation must have ceased from the skin and lungs; but as the latter was at 96° in tents, this salutary process was not wholly arrested, although the quantity of vapour carried off from the skin must have been utterly disproportionate to the necessities of the system at such a time. At night, however, when the air fell to 85 or 86°—within two or three degrees of the point of deposition—this must have been almost entirely arrested, and no doubt was so under some circumstances. The cutaneous exhalents may even be in activity, and pour out their contents on the surface of the body; here, however, the perspired matter will remain, clogging the pores, congesting the extreme capillaries, and, with the body thus bathed in deteriorated fluid, the oxygen of the air is excluded from the skin, and the heat accumulates, which ought to be steadily removed by evaporation. The first stages of this state are rather active, but, if prolonged, passive congestion is the result, and a train of signs indicative of a cholera diathesis ensues.

Cutaneous Exhalation.—It is scarcely necessary to allude to the vital importance of evaporation from the skin, and escape of vapour from the lungs, or by the renal emunctories, in all climates and countries; and every one, without knowing why, can appreciate the exhilarating and elastic feeling caused by *dry* winds, and languor and depression induced by humid ones; and in no country is this more perceptible than in India, even when there is very high temperature. The quantity of liquids, in one form or another, which is introduced into the body in hot countries exceeds that of cold ones by at least one-half, and in many individuals to double or treble the amount. The nature of things requires that it should be so; but it is equally important that this superabundant fluid should be carried off as quickly as possible, before it is replaced by a fresh supply of this necessary element, to become, in turn, the vehicle of extra heat and effete matters. I do not overrate the quantity of drink used by a soldier living in a tent at 90 or 96°, who consumes his ration of animal food and takes drams of arrack, in stating it to be at least ten pints in the day; whereas, during a calm, even if the body was without any covering, the air could only carry off from six to seven pints; and, the secretion from the kidneys being too insignificant to compensate for the loss of the cutaneous action, a portion of this must accumulate in the vascular system, and produce congestion; that, by daily increase, and by gradually disordering the functions, would create additional thirst, and add to the primary evils. It happens, however, that the body is more or less covered with clothing, and shut up in close tents or confined barracks at night, all tending to arrest the circulation of air and evaporation of the cutaneous exhalations during the night-time, when the thermometer falling from 90 to 86°, or within 3° of the dew point, would lessen the amount of fluid removed from the body to nearly three pints, or less than one-half. This is, in all probability, connected with the fact of many more men being attacked at night, or towards morning, than in the daytime.

United action of Morbid Agencies.—If, then—with constitutions long exposed to a bad climate, enervated by high temperature, and the qualities of the blood gradually changed by a deficiency of oxygen in the atmosphere—bodies of men become exposed to another and equally influential morbific agency, humid air, such as we have essayed to explain, we must anticipate the occurrence of much mischief. Simple congestion, if general, in a hot season, is alone sufficient to endanger life; for every tissue becomes engorged, and every function disturbed or altered. The arterial, venous, and lymphatic vessels and capillaries all participate in the disorder; the respiratory process is enfeebled and slow; the heart is oppressed, and unequal to its load; the brain and nervous system become torpid; the chylopoietic viscera lose their tone; and the portal system being in a great measure removed from the general circulation, is affected by this universal obstruction in a very marked degree. The sudoriferous vessels on the surface are in an atonic state, and passively allow their contents to escape on the skin, which is so profusely bathed in moisture as to lead to the supposition that this secretion is increased, while in reality it is, comparatively speaking, diminished; but from the non-evaporating state of the air it is not imbibed, and leads to this mistaken idea.

Latent Condition of Cholera.—The state of the system referred to, as resultant on chemical change of the constituents of the air—in which carbon is accumulated in the blood, and fibrine and albumen diminished—will vary in degree according to idiosyncrasies, habits, and constitution, so that certain numbers of a community will be affected to an extent bordering on, or breaking out into, open disease. Noxious agencies, whether of atmospheric origin acting on the skin and lungs, or as poison introduced through the assimilating functions, when applied in a minute degree, but steadily kept up for a length of time, have a tendency to produce effects that are called accumulative. Their action is latent, but not the less certain, till all of a sudden it is developed as if the whole had been suddenly concentrated into one overwhelming dose.

Connection with Scurvy.—The scorbutic diathesis furnishes a forcible example of this; and sudden death is not only induced by slight causes of excitement, in men labouring under it, but even those who have exhibited no alarming signs have been equally affected. This is exceedingly applicable to cholera, between which and scurvy there is a great analogy in the state of the blood; and on the former subsiding, the latter appeared in our regiment, and also in other corps.

Sudden Climax to Accumulative Morbid Changes.—If, then, by a sudden increase of all the causes of this latent diathesis, a state of the weather, inducing universal congestion almost approaching to obstruction of the vascular system, occurs, can we be astonished that life will, in many, be abruptly cut short, as if some lethiferous draught were suddenly swallowed? Such, I am firmly persuaded, is the only rational way of accounting for those numerous cases of cholera which terminated fatally in a few hours; with few of those symptoms which nature usually exhibits in a salutary effort to remove local or general congestion. Sound blood might circulate slowly without destroying the nervous power; but, if it is deprived in a great measure of its vitality, it is quite impossible that it can be *delayed* in the brain without producing rapid dissolution.

Medical Times, March 11, 1848, *p.* 388.

[On the treatment of this disease in the stage of collapse we next give the opinion of Dr. WARD, whose conclusions are drawn from the investigation of numerous returns and reports made to government; and by this process he has been led to regard with more favour certain remedies which from his own experience he had considered even worse than useless. In a paper which he read before the Westminster Medical Society on this subject, Dr. Ward said,]

The idea of the nature of cholera that seemed most consistent with its symptoms and with the effects of treatment was, that it is the prolonged cold stages of a peculiar form of fever, presenting more analogies with continued than intermittent fever, the effect of a poisonous miasm, which, if very intense, destroys the patient, without the occurrence of any active symptoms, in a few hours; but in other cases induces a gradually increasing congestion of the venous system, which relieves itself by the effusion of serous fluid into the stomach and bowels, which is as speedily removed by the actions of vomiting and purging. The blood thus deprived of its serum becomes thick and black, and is deprived of its vital properties to such a degree, that, unable to imbibe oxygen in the lungs, it ceases to stimulate the heart, which organ is thus unable to propel the blood through the extremities or through the lungs. This is the stage of collapse, in which the patient is blue, cold, pulseless, and voiceless, and his features are shrunk to such a degree that his dearest and nearest relatives do not recognise him; and this is the most fatal stage, and that least under the influence of remedies. Nevertheless, even under these deplorable circumstances we must not relax our exertions; and the list of curative means employed with success, prove that much may still be done for the relief of the patient. The most approved external remedies were, external heat, cold affusion, and counter-irritants. The author attempted to account for the favourable opinion of the application of cold in Persia, and of heat in Russia and the rest of the northern countries, partly by the concordance of such ideas with the ordinary feelings of the inhabitants in such different climates, and partly by the notion that in Persia, where the thermometer is above 98° in the sun, the patients exhausted of their fluids by the disease, would be dried up and mummified by any attempt to keep up the temperature of the body by exposure to the sun's heat; whereas in Russia, &c., it was supposed, and probably with truth, that as cold is a direct sedative, its opposite, heat, was necessary to restore the vital powers. All the reports concur in the efficacy of cold affusion in inducing reaction; and its success appears to have been in proportion to the violence of the shock. Counter-irritants were successful only in connection with other remedies; but they deserve attention from their stimulating power, and their readiness of application. Bloodletting was useful in every stage in relieving the congestion and rousing the heart by removing the load that oppressed it. In the state of complete collapse salt-and-mustard emetics, to excite the system, followed by bleeding, was a favourable mode of treatment. The internal remedies most to be relied on in the stage of collapse may be classed under the heads of revulsives, stimulants, and specifics. The first class, besides emetics of salt and mustard, comprised tartar emetic and croton oil, and calomel in large doses. The effect of each was to check the vomiting and purging; but the three last were remarkable for their power of restoring the flow of bile, of a dark-green colour, when tartrate of antimony or croton oil had been used; and like blue ointment, when the calomel had been given. The action of all three is supposed by the author to be irritating to the mucous membrane of the stomach and bowels, of which it stops the secretion by changing the action of the part. The blood thus diverted from the membrane returns without loss into the portal system, and, by the secretion of fresh bile, the bile previously pent up in the gall-bladder is expelled, the spasm of the duct having been relaxed by the irritation of its orifice, produced by the tartrate of antimony, calomel, or croton oil. The blue colour of the bile when calomel was used, may perhaps be explained by the decomposition of the salt by the alkali of the bile. From the number of returns in its favour, besides the extensive experience of the author in its use, he is disposed to place most reliance on the croton oil, as its action is simply irritant, (many of the patients complaining that it made their throats sore when given in solution or suspension); whereas the tartar emetic is a direct sedative, and, hence, may be dangerous; and the author had given calomel most extensively in large doses without ever having seen such effects produced as those which he has mentioned above from the reports of others. Stimulants, after a fair trial, were almost universally condemned; and yet it is remarkable that M. Magendie had more success with his punch than any other of the Parisian physicians. His great rival, Broussais, was so unsuccessful, that he entirely relinquished his care of cholera patients at Val de Grace. Opium, either in small doses as a stimulant, or in large ones as a sedative, was equally unfit to be relied upon. The last class—specifics—comprises calomel, with or without opium, cold water, salines, and quinine, although the author never met with a single case of real cholera in which he could trace the recovery of the patient to the influence of calomel, nor ever observed that it produced any specific effect whatever; still, from the almost unanimous approval it has met with, and his own experience of its benefit in English cholera, he would strongly recommend it for future experiment, as being, at the least, perfectly harmless, though taken in enormous doses. He would also adopt the use of cold water *ad libitum*, upon the faith of the reports in its favour, though his own experience is decidedly opposed to it. Salines, on the other hand, when well diluted, have, besides a number of most favourable reports of their efficacy, this hypothesis in their support—viz., that they restore to the blood by their endosmosis through the coats of the vessels, if not by their being absorbed directly into the circulation, the saline matter removed by the serous evacuations; whereas, the water, if it be not rejected by vomiting, as in the author's experience, could scarcely be absorbed, the tendency of the venous system being to empty itself; nor, if it were absorbed, could it supply to the blood those saline elements of which it had been deprived. In the author's experience, the best mode, though a painful one, of arresting vomiting in all cases, is to keep the stomach empty; when, after a time, it will cease to suffer the action of vomiting, whatever that may be. From an attack of English cholera he suffered, and thus cured, the last efforts of which produced only bloody mucus, as well as from other similar results after emetics, the author believes that the stomach contracts itself during vomiting. Quinine, viewed in reference to the hypothesis of the intermittent nature of cholera, seems worthy of still further trial than it has yet experienced. In conclusion, the treatment recommended by the author in the stage of collapse would be the following, and much in the same order as the remedies are stated:—Cold affusions; hot air; external counter-irritation, and frictions; venesection; mustard-and-salt emetics; cold water *ad libitum*, or Dr. Stevens' salines; calomel, and tartrate of antimony, alternately in large doses; and, if all failed, croton oil.

Mr. French said, that in conducting the treatment of the collapse of cholera, before using indiscriminately the articles of the materia medica, we should study the curative process adopted by nature to this end. We readily enough admit that this kind of knowledge is absolutely necessary in conducting the treatment of mechanical injuries, and that surgery is only a successful art when this principle is borne in mind. The mode in which reaction is accomplished by nature from the state of collapse in cholera, is a process with which I am perfectly familiar, by direct observation, and it is very simple. It consists in absorption of water into the bloodvessels, and in vomiting. It may be confidently stated, that a patient who is no longer purged, and who is vomiting, is undergoing reaction in the most favourable way possible; just as "adhesion" constitutes the most favourable and rapid cure of certain wounds. But to state the method more fully, it may thus be expressed:—

1st. Absorption of water into the bloodvessels; the patient's intense thirst inducing him to take this fluid freely.

2ndly. Nausea; which produces a general relaxation of the system, thus diminishing obstruction to the passage of the blood in the vessels.

3rdly. Vomiting; which mechanically assists in driving forward the blood in the congested vessels.

In the more intense states of collapse, the process of reaction is not established before the vomiting has continued for three days. In slighter cases, collapse, reaction, and convalescence, may all occur in twenty-four hours. When, however, the disease pursues this course, cases which presented the most hopeless aspect may do perfectly well, either becoming directly convalescent, or if local congestions and inflammations ensue, they assume an active character, and are under the control of art, while if this process has been frustrated, they commonly pass into a state of congestive and typhoid fever, in which they either sink or recover with great difficulty. As to the essential nature of the disease, I believe it consists in a poisonous influence which is exerted directly on the heart, depressing its action; for these reasons:—

1st. The heart's action is always diminished in this disease.

2ndly. No essential lesion of any other vital organs really exists.

3rdly. All the other symptoms and physiological conditions admit of explanation on this hypothesis.

The first argument is admitted by all observers. It will be also admitted that the functions of the brain are remarkably well performed until the very period of death. Then, there is no asphyxia for these reasons—the mechanical apparatus is undisturbed. We are familiar with the symptom, "coldness of the breath," (inconsistent with asphyxia); the recumbent position, so necessary to the cholera patient, would not be suitable for the state of asphyxia. Dr. Parkes, who has recently published a work replete with interesting facts on cholera, denies the paralytic condition of the heart, because the left ventricle was always empty: he also found that the lungs were extremely collapsed, and infers that the cause of the arrest of circulation must be sought for in the blood itself. The average duration of the disease, in the cases in which Dr. Parkes made post-mortem examinations, was ten hours; the observations were made sometimes a quarter of an hour after death; in all the cases the heart was found inirritable to the stimulus of the knife, while the muscles contracted under this stimulus. With the hope of learning something on these points, I destroyed a rabbit in two hours by repeated doses of infusion of digitalis; the animal became gradually too feeble to move, breathed quickly, and died: on opening the body, the heart was still feebly pulsating. The lungs were completely collapsed, and the left lung was so firmly contracted, that it sank in water; it readily admitted of inflation. The right side of the heart contained blood, and there was a very small clot in the left auricle; but the left ventricle was perfectly empty. The heart was quite as irritable to the galvanic stimulus as the muscles From this experiment I infer, that the influence of cholera on the circulation is exerted in the same way as that of digitalis. With regard to the condition of the blood in cholera, I believe it to be the best under the peculiar physiological condition of the patient.

Blood in the normal state is intended to be constantly circulated with a regulated amount of force. If this force be exceeded, we find that the fluidity of the blood is increased, that it acquires a brighter hue, and that it possesses the power of coagulating more firmly when stagnant. The converse of all this obtains with diminished force of circulation. To this alteration in the constituents of the blood is possibly owing the absence of fibrinous deposits in the heart or the vessels; the retention of its homogenous condition, and its adaptation for the re-admixture with water during reaction, so soon as the baneful effects of the poison shall cease to be exerted in the system. Thus to sum up:—In proportion to the force with which the circulation is controlled, either death results, or the blood is diminished in quantity, and altered in quality, by a secretion from the alimentary canal—the overwhelming effects of sudden congestion and fibrinous deposits being probably thus prevented.

[Dr. King, who had the charge of a large district during the prevalence of cholera, stated that after he had tried many modes of treatment for the stage of collapse, as Stevens' salines, calomel and opium, stimulants, &c., and found them equally unsuccessful, he adopted Mr. French's plan, placing a pail of cold water by the bed-side, and letting the patient drink *ad libitum:* at the same time he gave large doses of calomel, and when vomiting or hiccup came on, the patient generally did well.]

Medical Gazette, Dec. 17, 1847, *p.* 1074.

[Dr. Massy's experience of cholera was gained during an epidemic which attacked Umballa, a large, dirty, and densely populated Indian city, in the year 1845:—an epidemic which ravaged Cabul, Affghanistan, and the Punjaub. Dr. Massy discriminated three forms of the disease. The first began by vomiting and purging of a greenish and brownish fluid, like the sporadic bilious cholera; but in a couple of hours the colour of the fluid changed, becoming whitish, and at the same time thinner and more copious. The administration of acetate of lead and opium in pills, opiate injections, or chalk mixture with opium and aromatic confection prevented the disease progressing. Further, Dr. Massy says:]

The best means of allaying the vomiting is by giving effervescing draughts with tincture of opium. Keep the patient warm and in bed, and the next day, give a large emollient purgative injection; but if you do not check this disease in the beginning, you may depend upon its assuming the severe characters in a few hours, when you will have to resort to the more active means, which I will mention just now. The next form of the disease is that which I propose denominating the second species; it begins by purging and vomiting of whitish fluid, or mixed with green; the patient feels weak even in the commencement; the skin at first is warm, but very soon the temperature wonderfully decreases; the pulse, at first quick and small, like the heat of skin, soon sinks below the natural standard; the tongue is white and dry; the patient asks for a drink, and in a second or two more begs for another. You will also at this time perceive a change in the voice; I have frequently seen this one of the earliest symptoms. The symptoms increase if not checked by medicine; cramps of the most violent description come on, chiefly in the feet, calves of the legs, thighs, and hands, which cause such excruciating torture, that I have rarely met even the most resolute able to resist screeching out. The skin now becomes quite cold, assumes generally the blueish hue so remarkable in cholera, and in a short time you will find it corrugated in almost every part, reminding one exactly of a woman's hand after washing for several hours. You will also be struck by the very peculiar countenance of the patient; the features are all sharpened; the eyes sunk in the orbits, but starting wildly; the tongue, if you place your finger on it, will be found quite cold; the patient's breath, if he breathes on your hand, is also cold. I shall never forget the first time a man in the advanced stage of cholera breathed on my hand—it actually made me start, it was so much colder than the atmosphere; all this time the patient screams out for cold water to drink: if you ask him is he cold, he says no, he is burning hot, he wants something cold to drink. I never actually tested how much a man in this state would drink, but fancy it would be something enormous, for he generally throws it up as fast as he drinks it;—sometimes, one would fancy, by a spasm of the œsophagus, for it has hardly time to reach the stomach, and still while he is vomiting he stretches out his livid hands, crying more, more! It is a remarkable feature in cholera that a patient very seldom makes water during the existence of the disease: indeed I cannot call to mind having seen more than three or four instances of patients voiding urine in true Asiatic cholera: this was so remarkable at Umballa, that when a man did so his friends used to cheer him by telling him he was recovering; yet many of the other secretions exist. The skin secretes perspiration, the mucous membrane mucus, and the salivary glands saliva; for frequently have I seen a patient in the last stage of cholera, when his strength was completely exhausted, spit nearly across the room, and in the same way eject water while drinking. The change in the countenance is most wonderful in so short a time; men whom I have known intimately I have been unable to recognize. Restlessness is a very marked feature, it is almost the only sign of raving I have usually remarked; a patient will tell all about his symptoms, how he was attacked, talk of his will and all his affairs in a most rational manner, yet he will constantly try, while no one is watching, to get out of bed, to turn from one side to the other, kick off the bed-clothes, and rail at everything: this species of case, if it ends fatally, generally does so in one or two ways—either the purging, and occasionally the vomiting, continue almost to the end, or else both cease, and the patient dies labouring under the symptoms of effusion on the brain; the pupils are dilated and fixed, it is impossible to rouse him, and his breathing is stertorous. The treatment of this case depends in the first instance on bleeding, and largely, if the patient's pulse is good, giving at the same time twenty grains of calomel with one of opium. This, I think, will be found the best practice, at least we found it so in the hospital of the 31st Regt. Often have I seen the purging and vomiting cease almost instantaneously. The calomel and opium in the first place act as an immediate sedative, and the bleeding relieves the circulation more than purging, removing a mass of blood instead of depriving it of its fluid part. After twenty minutes give ten grains more of calomel and half a grain of opium; this will further prolong the cessation of the symptoms, and in about an hour you will find the calomel acting freely on the liver, when quantities of bile will be passed by stool. When it has acted in this way for some time you may give opium, but not till then: of the various species of practice I have seen tried, I think a reliance on opium in this form of cholera the most faulty: you may exhibit any amount of opium, while a man is purging and vomiting white fluid, without producing a single sign that the medicine has been swallowed,—the purging and vomiting still continue. If you happen not to see your patient (as is too often the case among soldiers) until the disease is farther advanced,—until his voice is changed, pulse a good deal reduced in strength and frequency, features sunken, temperature reduced, skin blueish, tongue cool, &c., —I would recommend the bleeding to be smaller. You may be able to repeat it; but, as you draw blood, stimulate, give punch, brandy, or wine and water, or carbonate of ammonia. Apply friction, with stimulating and hot liniments to the extremities, warm sand-bags to the feet, sinapisms to the calves of the legs and pit of stomach; for if once you can raise the pulse, the chances in favour of recovery will be vastly increased. I have seen more than one case where the pulse improved after this treatment and again fell away, when it was deemed advisable to take blood a second time with decided advantage, stimulating at the same time. Cases of this kind cannot endure the loss of blood, even in small quantities, without stimulants. This we learned by sad experience at Umballa; most of the cases we bled in this stage sunk without a rally. We were about to condemn bleeding in cholera, when once the symptoms of collapse set in, but we tried stimulants together with the bleeding. and found the practice the most successful of all we adopted. When the pulse and temperature of the body improved, and the purging was checked, we were in the habit of giving calomel and opium, as above; by this promoting the secretions, and, after they were fully established, checking them by opium, &c. Many are advocates for injections; but I always found, while purging existed, stimulating injections increased it, still draining the blood of its fluid parts, augmenting the disease. Every one has remarked the thick dark blood that flows from venesection in this stage of cholera: it hardly coagulates, and is devoid of serum; for though in the worst cases, where neither purging nor vomiting exists, the blood is found thick and dark, still it stands to reason that, where they are present, the great quantity of fluid ejected must be eliminated from the blood, thereby increasing the tendency to this thickened condition. It is recommended by many to allow the patient to drink largely of water, for the purpose of its supplying this deficiency. I have likewise given alkaline mixtures largely, both by mouth and injection, warm and cold, but never could perceive the least advantage result from either practice. When the cramps are distressing, I have seen anodynes and anti-spasmodics exhibited; but the best means of allaying them is by continued friction with stimulating liniments. I have also administered tonics, quinine, &c.; but in this disease, as I have seen it in India, the practice was not successful.

The next, which I propose as the third form of the disease, is one I have met, though not near so frequently as the last: it is that in which the patient is brought into hospital in a state of collapse; and, if you inquire, you will find that he has hardly been purged at all, probably not vomited either; his features shrunk; eyes sunk in the head; skin, all over the body, corrugated; body quite blue; he has no cramps; tongue, skin, breath—all as cold as death; pulse not to be felt. He has no energy; asks merely for a drink of cold water: complains of burning heat at the epigastrium. This is the most fatal of all; but, thank goodness, it is not a common form of the disease, though the other species often terminate in this way.

All means of treatment that I have seen in this stage have been most unsuccessful, though I have tried nearly every remedy I ever heard of. If you open a vein, no blood flows, except a few drops, thick, dark and semifluid. The only means you can use are, turpentine injections, mustard emetics; afterwards stimulants by the mouth, hot baths, sinapisms to the legs and epigastrium; blisters to the nape of the neck. Continued friction with turpentine warm; for you will find that the skin is hardly affected by blisters. In this stage, hot turpentine rubbed along the spine is not a bad means of stimulating. I have seen cold affusion practised in this and the former stage of the disease; and though I have heard some men of experience in India (whose opinion cannot be held lightly) recommend this mode of treatment as a stimulant to the circulation, I am sorry to say, in the cases tried in the 31st, it was not deemed a favourable mode of practice.

I recollect almost the last case of this sort I saw in India was that of one of the paymaster's clerks. I tried to bleed him from the arm, but no blood would flow. I then opened the anterior branch of the temporal artery: the blood flowed at first slowly in a small stream, as if coming from a vein, not *per saltem.* In a few minutes, however, it came in a stronger stream; the pulse at the wrist was soon perceptible, and the man finally recovered without a bad symptom. The change in the pulse, and the sudden improvement in this case, was the most remarkable I ever saw. Had I not frequently tried the same means unsuccessfully before, I should have vaunted this as a specific. I suspect it is from similar origins the different specifics for cholera have arisen. I think the treatment I propose will be found the most successful. I know it was the plan adopted by many medical men at Umballa during this epidemic, always bearing in mind that if the collapse is great you must stimulate while bleeding.

I have but one other subject connected with cholera to remark on, namely, the supposition of infection or contagion, neither of which, I am satisfied, exist. There were four medical officers in the 31st at this time, a number of apothecaries and apprentices, besides a great many servants connected with the hospital in constant attendance on the sick. I have, together with the other medical officers, spent hours by night and day in the cholera ward, and out of twelve or fourteen Europeans and some forty natives, none had a symptom of the disease. I think one of the strongest arguments that can be adduced in favour of non-contagion, is the fact that the natives in India, who have more opportunities than any other persons of forming a correct opinion, believe not in it, and if they had a shadow of belief, the Bengal coolies, who are proverbially the greatest cowards in existence, would not sit as they do quite unconcernedly alongside of a dying man. Many times have I been obliged to kick the coolies, as, with their chudders wrapped around them, they have fallen to sleep while rubbing a man suffering from cramps, with their heads against the bed upon which the patient was lying. I have seen two epidemics of cholera in India, besides many sporadic cases, and never knew an instance where contagion for a moment could be substantiated.

Medical Gazette, Jan. 28, 1848, *p.* 144.

[The following is Mr. M'Coy's summary of his experience on the subject:—]

1st. That stimulants, given internally, in any stage or form of malignant cholera, of whatever they may consist, or in what doses exhibited, are decidedly injurious.

2nd. That external stimulants, as frictions with mustard, &c., to the patient's limbs, are of no use whatever.

3rd. That attempts to raise the temperature of the body by artificial heat are always useless, greatly distress the patient, and, I am disposed to think, sometimes do harm even.

4th. That *cold* drinks, and cold water particularly, are the most useful, and by far the most agreeable that can be given.

5th. That calomel has been, *by far*, the best medicine I have used, or seen others use, and that I have never seen injury from its exhibition, in any quantity, in cholera.

6th. That the first appearance of bile in ejections from the stomach or bowels is evidence of recovery.

7th. That consecutive fever, or local inflammation, is no part of cholera.

Dublin Medical Press, March 1, 1848, *p.* 140.

[In his Lectures on the Practice of Medicine, DR. WATSON, when speaking of the various plans of treatment adopted in Asiatic Cholera, observes,] But when the regular symptoms peculiar to the severe form of cholera had set in, medicine, I repeat, had very little influence upon it: and accordingly, as might have been expected, a hundred different cures of the disease were announced, most of them all but infallible. Some persons held that timely bleeding would save the patient; others relied confidently upon mustard emetics. Hot air baths were manufactured, and sold to a great extent, to meet the apprehended attack in that manner without delay. Certain practitioners maintained that the disease was to be remedied by introducing into the system a large quantity of neutral salts, which were to liquefy and redden the blood, and to restore the functions of the circulation. But of this practice it was said in a sorry but true jest, that, however it might be with pigs or herrings, *salting* a patient in cholera was not always the same thing as *curing* him. In a great number of patients the blood was mechanically diluted by pouring warm water, or salt and water, into their veins. Some physicians put their trust in brandy, some in opium, some in cajeput oil, which rose to I know not what price in the market; some, again, in calomel alone.

Medical Gazette, April 7, 1848, *p.* 584.

[DR. TURNBULL, after referring to the impracticability of raising the diminished temperature of the body in cholera patients by ordinary means, says,]

My plan of treatment consists in endeavouring, by means which can be repeatedly applied without excoriation of the skin, to re-excite an action of heat on the surface of the body, and thereby to restore the lost balance of circulation and nervous energy. For this purpose I employ an extract made of capsicum, with alcohol, reduced to the consistence of jelly. Three drachms of the extract to be well mixed with six drachms of purified lard; the patient to be well rubbed over the abdomen, heart, and calves of the legs, several times a day; and at all times if there be any coldness over the surface of the body, or when spasm takes place in the abdomen or calves of the legs. The rubbing ought to be continued until such time as the patient expresses that the heat is intolerable. Another form of the employment of capsicum is the following embrocation:—Concentrated tincture of capsicum; viz., capsicum pods, four ounces; rectified spirit, twelve ounces; macerate for a week, and strain. To increase its energy upon the nervous system, when required, I add two or four grains of delphinia, or veratria, to the tincture. Another method of obtaining the advantages of capsicum, speedily, and without much expense,—and which may be considered a household recipe for cholera until medical assistance can be obtained, is to boil four ounces of capsicum in a pint of olive oil, for six hours, and strain. To free the capsicum from the chloride of sodium with which it is generally united, it is necessary to add water, and strain, previously to mixing it with the oil, otherwise it will produce vesication. The chloride of sodium is the chief, if not the only, material whereby vesication is produced when capsicum is used externally.

The advantages that the capsicum possesses over many other stimulants is, that it produces no vesication, and therefore can be repeated very often. Another advantage is its very permanent and certain effects; and there is no part to which it may not be applied without injury. The capsicum will be found a most powerful rubefacient; it assists in restoring heat and circulation to the surface, while the delphinia and veratria united with the capsicum restore the lost nervous energy. This plan of treatment can be pursued without much disturbance to the patient, the movement of whom is attended with the worst consequences. I have often used the different preparations of capsicum, with or without veratria and delphinia, in congestive fevers, with very good effect, and also in cases of cramp or spasm. This stimulative plan does not interfere with the administration of other medicines, but, on the contrary, greatly assists in restoring the lost power of the nervous energy and equalizing the balance o fcirculation.

Lancet, Jan. 29, 1848, *p.* 119.

53.—ON FLATULENCE.

By Dr. Robert Dick.

Flatulence of the stomach and bowels has two principal sources—the liquid and solid alimentary ingesta, and (as some assert) exhalation from the mucous membrane. Wo must frankly own that we have yet met with no grounds other than conjectural for the latter view; we are aware of no *facts* that prove it. True, indeed, John Hunter—an authority not lightly to be questioned—supposed exhalation from the mucous surface to be an occasional source of gaseous distention; still we must repeat our opinion, that the alleged fact rests on no *positive* evidence; while there are not a few strong presumptions against it, into consideration of which, however, it would not be expedient to enter now. Suffice it only here to observe, that if the rapid meteorismi or pneumatosis which arise in the last stages of adynamic fevers, &c., seem to prove the fact of the sudden secretion of gases by the mucous membrane, is it not just as likely, we would ask, that the phenomena named are due to the suspension of secretion and nervous action in the stomach and bowels, and the opportunity thence afforded for the play of the ordinary chemical affinities in the aliment or *excretions* in the stomach and intestines—nay, perhaps, to some morbid secretions, the consequence of depressed or dormant vital power, and which actually favour the occurrence of ordinary chemical action in the contents of the bowels, and the thence resulting extrication of gases? This, at least, is a more *probable* supposition than the other.

On the same principle, I would account for the air eructated in gastritis, hepatitis, &c. The vital and conservative power of the mucous membrane being in these cases greatly reduced, while, at the same time, the temperature of the stomach is greatly augmented, the play of *non*-vital chemical affinities is favoured—the stomach's own *infra*-natural secretions become the ready subject of these.

A third source of gaseous fluid in the stomach and intestines may be named, though we consider it as of little importance—namely, the atmospheric air swallowed in the acts of mastication and deglutition, and mechanically contained in the articles eaten, as, for example, in the pores of bread, &c.

The gases of the stomach are principally nitrogen, oxygen, and carbonic acid, nearly in the proportions of atmospheric air. The gases of the intestines are those now named, and, in addition, carburetted hydrogen, hydrogen, and occasionally sulphuretted hydrogen. The intestinal gases are further often loaded with vaporous particles of the fœtid contents of the bowels.

Flatulence, as we have formerly remarked, is often owing to an inefficient action of the liver, and a deficiency of bile in the intestines. Whatever promotes the hepatic secretion tends to remove flatulence of this origin; hence a few drops of colchicum wine are often effectual. Still more sure are minute doses of mercury. An ante-dinner and an evening pill, consisting of a grain of blue pill and three of extract of rhubarb, acts with wonderful good effect in many cases of this kind, in which, along with flatulence, there are slight constipation, yellow-furred tongue, ill-tasted mouth, &c. As in gastro-duodenitis, there is often, from the vascular tumescence of the duodenal mucous membrane, a constriction, and sometimes complete temporary occlusion of the mouth of the ductus communis choledochus, with, of course, interruption to the discharge of bile; hence, in part, the flatulent eructations &c. which accompany gastro-duodenitis. It is far from unlikely that the pancreatic duct and secretion are often affected in a similar way; but for some unaccountable reason, it has not pleased pathologists of any age to pay much attention to this unobtrusive viscus—some seeming even to think that it, as well as the spleen and supra-renal capsules, are not necessary, because not understood.

Treatment.—When the tongue is pale, when there is no tenderness on pressure at the epigastrium, or in the right hypochondrium, when there is no thirst, no dry heat of skin, and no quickness of pulse, flatulence requires carminatives, bitters, and even stimulants. Thus the patient may be directed to use freely any of the following waters:—cinnamon, fennel, cassia, pimento, peppermint, pennyroyal, mint, Cologne, lavender, caraway, aniseed, dill, balm; to these, some of the respective tinctures may be added. With the carminative waters just named, one or more of the following bitters may be given—camomile, quassia, columba, absinthium, rhubarb, to which may be added valerian, castoreum, and camphor. As an expellent of flatus existing in the bowels, assafœtida, or oil of turpentine, the former given by the mouth, or in injection, the

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latter in injection, are superior to all things else, excepting, perhaps, the infusion and spirit of armoracia.

Secondly. If flatulence is accompanied with a dry and preternaturally red tongue and fauces, with thirst, heat of skin, tenderness of epigastrium, scanty and high-coloured urine, heartburn, &c.—in short, with symptoms of inflammatory irritation of the gastro-duodenal mucous membrane, than alteratives are clearly indicated, or rather such substances as promote the secretions of the mucous membrane; these are ipecacuan, sulphur, potassio-tartrate of antimony, the various preparations of mercury, magnesia, iodine, nitrate of silver. These we would be disposed to give a trial to successively, almost in the order in which we have named them. But a great variety of other means may be tried, and among these the following, in those cases in which flatulence is accompanied with obvious torpor and fulness of the liver, as well as with gastric irritation. The wine of colchicum, for example, may be given with a few grains of the sulphate of potass, or if there are acid eructations and heartburn, with carbonate of magnesia; the infusion or tincture of arnica may be given in the same combinations, and so may the powder and extract of cusparia. In short, instead of perplexing our minds with the confused subdivisions of authors, whose classifications betray they had no clear and scientific notions of the proper treatment of flatulence, the simple point to be ascertained and kept in view is, whether flatulence (always a mere symptom) is or is not accompanied with inflammatory irritation, is or is not attended with stomachic debility—and according as we decide these queries, we adopt the former or latter modes of treatment above enumerated.

Lancet, Nov. 20, 1817, *p.* 545.

54.—*On the Use of Acetate of Lead in Flatulent Distention of the Intestines.*—By DR. J. C. BADDELEY, Chelmsford.—[A patient having taken active purgatives for the relief of an attack of colic, and the bowels having been freely acted upon, was seized with distressing pain and cramps, and distention of the belly from flatus. Vomiting came on, and hiccough, and continued together with the pain and distention in spite of the employment of opiates, turpentine injections, calomel and opium, castor oil, &c.; and the case appeared desperate. Under these circumstances, Dr. Baddeley says,]

Feeling convinced in my own mind that, under the absence of inflammation, *this distention proceeded from want of tone in the muscular fibres of the intestinal canal*, and their consequent failure of power to contract and expel the increased generation of air, I ordered large doses of alum, persisting, at the same time, in the daily injection of turpentine. which appeared to give more relief than any other remedy which was applied. Again disappointed, however, in the result, and remembering the strong advocacy by Dr. Graves, of Dublin, of the acetate of lead in tympanitis, I determined to give it a fair trial, though not without considerable apprehension of its constipating effects. I prescribed, nevertheless, three grains of the superacetate of lead, with the sixth of a grain of acetate of morphia, in a pill, every four hours, and a continuance of the turpentine enema every evening. The excellent effects of this combination soon began to manifest themselves, by the comparative suppleness of the abdomen, the expulsion of large quantities of air, the subsidence of the cramps, spasms, and pain, and even by copious dejections. The hiccough gradually declined, the appetite began to return, and convalescence was at once established. The pills were reduced to only two in the twenty-four hours, and finally to one; and the patient is now only suffering from the debility and emaciation consequent on the severity and protraction of the attack. The validity of the theory of this practice is, therefore, I think, sufficiently proved to entitle it to publication; and as the prominent feature of the disease is by no means uncommon, I shall be happy to find that my calling the attention of the profession to the value of the acetate of lead has been productive of similar success in the hands of other practitioners. About two years ago I was equally successful with the sulphate of zinc and opium, in the case of a lady who had been severely afflicted with enteritis, and consequent distention of the abdomen; but the inflammatory symptoms in that case required of course a different plan of treatment, and copious depletion, ere it could be resorted to. The case having been already published, I shall not enlarge upon it on this occasion. I shall only, in conclusion, observe, that I believe abdominal distention from flatulence, and also constipation, to be dependent very frequently on want of tone and muscular power in the canal, and that as the repetition of drastic purgatives is often productive of this unpleasant result, relief may often be obtained from metallic tonics and medicines of an astringent nature.

Lancet, Jan. 8, 1848, *p.* 44.

55.—*Ox-gall in Constipation.—Efficacy of Ox-gall in Removing Impacted Fæces.*—DR. EDWARD VANDERPOOL of New York, relates in the New York Journal of Medicine, the case of a man, forty years of age, of full habit, whom he attended, who was suffering from pain and great distress in the right iliac region, preventing rest and sleep, and causing constant moaning. He had been confined to bed a fortnight with these symptoms, during which time he had been treated antiphlogistically for peritoneal inflammation; calomel, cathartics, and castor oil had been repeatedly given, producing only a slight fæcal evacuation every day; calomel and ipecacuanha, and calomel with Dover's powder, had been continued in small doses; his mouth had been touched for more than a week; leeches had been repeatedly applied, and at last a blister. The right iliac region appeared preternaturally full; a hardness was here discoverable, as of a tumour lying deep in the abdomen, occupying the seat of the cœcum and ascending colon, which was very painful on pressure. For two years he had been subject to colicky pains, for which he would every week or two take a cathartic dose of calomel at night, and follow it with salts in the morning. A small motion would be the only result, with the invariable feeling of not being relieved. The inspissated ox-gall was prescribed, in doses of eight grains, three times a day, and enemata of diluted gall, to the amount of two quarts, night and morning; broth and farinaceous drinks. The first enema extended to the part affected, and produced a quantity of scybalous fæcal matter, with some mucus. Some alleviation followed this evacuation. The enema was repeated next morning and evening, with the effect of an increased quantity of old fæcal matter, and less pain afterwards in the iliac region. Considerable exhaustion following the morning enema, it was thought better to omit it in future, and give eight grains of the gall four times a day, and use the injection at bedtime. This course was pursued for ten or twelve days, resulting with a voluntary fæcal evacuation in the morning, which had the appearance of long impaction, and a quantity of the same in the evening, believed by the patient to have been by him two years. The abdominal distress abated as this old fæcal matter passed off, and the mucus daily lessened in quantity. He convalesced steadily without any other medicine, and was soon discharged cured.

Medical Times, Jan. 1, 1848, *p.* 215.

56.—*New Suppository Syringe.*—At a Meeting of the Westminster Medical Society, Dr. Coley exhibited an ingenious suppository syringe, consisting of a tube like an enema pipe, and a handle acting like that of a common syringe. There is a small orifice at the extremity of the tube, in which the suppository is placed, and when the tube is inserted into the rectum, the piston is pushed forward, and the suppository placed in situ. The exhibitor had invented it many years since, but it was not generally known.

Lancet, March 25, 1848, *p.* 341.

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URINARY ORGANS.

57.—ON ACIDITY OF THE ANIMAL FLUIDS.

By M. Mialhe.

In some investigations conducted a few months ago, M. Mialhe found that the greater part of the fluids of the animal body are naturally alkaline, and that therefore the excessive employment of alkaline remedies cannot speedily produce any very injurious effect, since they do not alter the nature of the fluids within which are effected those chemical changes which are continually taking place in the body. This alkaline condition of the animal fluids distinguishes them from the vegetable fluids, whose composition is usually of an acid nature. The alkaline state seems to be quite essential in order that the decomposition and subsequent assimilation of amylaceous and hydrocarbonated principles received into the system should be duly effected; and it does not appear that an excess of alkali interferes with the production of these important changes. M. Mialhe found, also, that the employment of alkaline medicines, usually efficacious, can only be injurious where the fluids already contain an excess of alkali—an event which happens in some morbid states. It occurs, for example, among the inhabitants of the country, who are exposed to the full force of the sun, and have to undergo a great amount of labour, whereby a large quantity of acid is excreted from the system in the form of sweat, and, in consequence, the animal fluids are kept in a very alkaline condition. The same thing happens, also, among those who live chiefly on a vegetable diet, and who thus introduce into their system a large quantity of alkaline carbonates, formed by the decomposition of the salts of the organic acids contained in the vegetable food. From these considerations M. Mialhe maintained that the administration of alkaline remedies in even considerable doses is productive of less decided and less speedy harm than the administration of acids. His present observations are intended to demonstrate the truth of this proposition.

He remarks, that, inasmuch as the principal animal fluids are usually alkaline, and inasmuch, therefore, as the chemical and vital changes continually taking place in the body are effected, for the most part, in an alkaline medium, it is quite evident that if the fluids become altered in their nature, if they are rendered neutral or acid, important functional disorders will infallibly ensue. In the presence of acids, or even in the absence of alkalies, the chemical phenomena which ordinarily take place can no longer be produced in the same manner; the process of nutrition will not accomplish the necessary metamorphoses; all the vital fluids whose composition is thus so different from their natural state, will no longer be able to give rise to those intimate changes which they are destined to determine within the substance of organs and tissues. The system unaccustomed to such conditions will at first resist, but, after a time, must yield to their continued influence, and then will arise general debility, combined with serious diseases, which it will be difficult to overcome so long as the acid state of the fluids continues, or even after its disappearance, if it has long existed. Pyrosis, uric acid gravel, gout, scurvy, and diabetes—affections between which there is a much closer relation than is usually supposed—are among the consequences of this abnormal state of the animal fluids.

The excess of acid in the animal system is, unfortunately, an event which may very readily occur, and may be the result of many different causes. The first of these causes is the ingestion of acids themselves. During the intense heat of summer, persons are very apt to allay the ardent and frequent thirst they are then so much troubled with by indulging in large quantities of acidulated drinks. Another source of acid principles in the animal fluids may be in the too exclusive employment of nitrogenous articles of food. The albuminous matters of which such alimentary principles are composed contain a large quantity of sulphur and phosphorus, and these bodies, by the kind of combustion which they are supposed to undergo in the system, give rise to a considerable amount of sulphuric and phosphoric acids, which at first saturate the alkaline bases they meet with in the animal fluids, and then produce an acid state of these fluids, and so lead to the occurrence of the evils above pointed out. A third and more important cause of acidity is derived from excessive rest of the body—from inaction. The want of exercise is an obstacle to the secretion of perspiration, and the acids which, by the healthy discharge of this function, would be eliminated from the system, are, by its interruption, retained, and speedily give rise to the ill consequences resulting from their presence.

It is certainly to these causes that must be referred the superabundance of acid which so frequently occurs in the animal system. And the diseases, which are especially the effects of this abnormal condition, such as gout, the lithic acid diathesis, and diabetes, most frequently do occur among those persons who are the most exposed to the influence of these causes. Hence their prevalence among the rich, who, from the highly nitrogenous character of their food, and the small amount of exercise taken by them, are very prone to the formation of an excess of acid in their system. Gout is an affection seldom suffered by the inhabitants of the country, for their active lives and frugal habits are opposed to its attacks; they enjoy a like immunity from diabetes also. According to M. Mialhe's theory of the nature of diabetes, it would seem that this disease is essentially connected with an acid state of the animal fluids. When such acidity exists, however it may be produced, the glucose resulting from the amylaceous principles taken as food, can no longer be decomposed and assimilated; for in order that its assimilation should be effected, it must be brought into relation with an alkali; and it therefore accumulates in all parts of the system, giving rise to the phenomena of diabetes. In confirmation of this view, M. Mialhe remarks, that herbivorous animals are entirely strangers to diabetes; a circumstance which he thinks to be due to the alkaline condition in which all their fluids—even urine, which among carnivora is naturally acid—are kept by the constant use of vegetable food, and by the habits with which these animals are endowed by nature.

The lower classes in a country district, who by their hard labour perspire largely, may with impunity partake of acidulated drinks to a considerable amount; for the acid thus taken in is speedily eliminated in the fluid of perspiration, and, moreover, the vegetable food of such persons tends to neutralize any excess of acid that may occur in the system. The same will apply to the inhabitants of hot climates, who indulge most largely, and without danger, in lemons, pomegranates, tamarinds, and other acid fruits. It must be observed, also, that the use of acid fruits is at all times likely to be attended with far less injurious consequences than the employment of free acids, for a portion of the acids contained in fruits always exist there in the state of an alkaline salt, which allows of being transformed, in the blood, into carbonate of potash. This fact explains why certain acid fruits, such as grapes, are capable of rendering the urine alkaline, and to such an extent, that they are sometimes employed with advantage in the lithic acid diathesis. When acids are taken by persons who use little exercise, and who, at the same time are exposed to a low temperature, by both of which circumstances the secretion of sweat is interfered with, they speedily induce an acid condition of the system, and are liable to be followed by the injurious results depending upon such condition. The course to be pursued in such cases is quite obvious, namely, to take free exercise, to employ alkalies, and to abstain from food containing much albuminous principle.—*L'Union Médicale*, 19 *Février*, 1848.

Medical Gazette, April 14, 1848, *p* 656.

58.—ON CERTAIN FORMS OF ALKALINE URINE.

By Dr. G. O. Rees, F R S., Assistant Physician to Guy's Hospital.

The fact that an alkaline condition of the urine may occasionally be removed by the exhibition of alkaline remedies, is well known to those who see much of urinary disease. In 1845, I took occasion to refer to such cases, as follows:—“The real disease exists not in the presence of any peculiarity on the part of the kidney as a secreting organ, but on a tendency to the production of *alkaline fluid on the lining membrane* of the whole, or a part of the urinary apparatus.” * * * * * “It almost admits of demonstration that the kidney frequently secretes urine possessing the qualities of health, with its acid reaction and other normal qualities, while it passes from the urethra fœtid and ammoniacal.” * * * * “If the alkali were administered in small doses, so as only partially to neutralise the acid state of the urine as secreted by the kidney, we might relieve the irritation of the mucous membranes, stop the excretion of alkaline matter, and have an acid urine excreted; the natural acidity having been only partially destroyed by our remedy.”

Some months ago I heard from my friend, Mr. Henry Wakefield, that he had a patient whose abdominal parietes were deficient, and whose bladder (as is generally the case with such persons) possessed no anterior walls, so that the fundus was protruded through the abdominal opening.

On visiting this case, and examining the protruding fundus of the bladder, I easily detected the openings of the ureters, and could see the urine dropping constantly from them. The urine, when tested with blue litmus paper, immediately reddened it, and evidently possessed the full acidity of health. This result was obtained, however, only when the test was applied close to the openings of the ureters. On placing a piece of the blue paper in such a position as to receive the urine as it dripped from the patient, and consequently after it had passed over the mucous surface of the bladder, no indications of acidity could be detected, the paper retaining its blue colour. Reddened litmus paper, however, was immediately turned blue by this urine, and in such a manner as to show the presence of alkali in considerable excess. The litmus paper could thus be turned red or blue at will, accordingly as we held it in the urine at the openings of the ureters, or, on the other hand, placed it so that it might receive the urine as it dropped from the patient, and consequently after it had been acted upon by the exposed mucous surface. The lower part of the exposed fundus was thus alkaline, while immediately below the openings of the ureters the urine rendered the surface acid. The short distance which the acid urine had to pass over the membrane, and its constant subsequent flow in an alkaline state, are circumstances which show how plentifully and rapidly the mucous surfaces can secrete alkaline fluid when it becomes necessary for their protection, and removes the difficulty which might suggest itself to the mind in arriving at the belief that so large a quantity of fluid as that which enters the bladder could have its acidity more than saturated by such a cause. That the mucous membrane can perform this is most certain; and the application of the fact as an element in our considerations when investigating diseases connected with an alkaline state of the urine, is a matter of most paramount importance. Cases showing symptoms said to be indicative of the phosphatic diathesis have caused practitioners much anxiety, and we are too apt to connect them with debility or wasting of the nervous centres. I feel sure that a great number of such affections have their origin in nothing more than an increased alkaline discharge from the mucous surfaces. This has been sufficient to cause the excretion of alkaline urine in quantity; and, in consequence of its alkaline condition, the earthy phosphates become deposited,—thus affording the practitioner a symptom to which he may attach most undue importance. The case, in fact, may even be one in which the urine has been secreted abnormally acid, the changes giving it a phosphatic character having occurred subsequent to secretion, and as a consequence of irritation of the mucous surface lining either the bladder, the ureters, or the uriniferous tubes.

Medical Gazette, April 7, 1848, *p.* 579.

59.—ON THE EXISTENCE OF URIC ACID IN HEALTHY URINE.

By Dr. Golding Bird, F.R.S.

The use of the kidneys is to convey without the system principles the stay of which would be detrimental. Dr. Bird, from a large number of observations, infers that the quantity of solids conveyed out of the system by the kidneys may amount, on an average, to from 600 to 700 grains in the course of twenty-four hours; or, making allowance for variations dependent on the amount of exercise, the kind of regimen, diet, and idiosyncrasies, it may be estimated at 650 grains in twenty-four hours. Of this, from 255 to 270 grains, or more than half an ounce, are urea, which are eliminated during the same time.

Besides urea, the urine contains uric acid, sometimes separately, more frequently in union with ammonia, so as to form urate of ammonia. It is to be observed, however, that in opposition to the idea of uric acid being ever alone in the urine, it is so insoluble as to require, according to Dr. Prout, 10,000 parts of water at 60 degrees for solution, while the urine has not of water quite 2500 times the weight of uric acid. It is hence to be inferred, that there is a chemical impossibility in the uric acid existing in the free state in the urine, unless there be some other yet undiscovered means of rendering this substance at least four times more soluble in the urine than chemical experiment has shown it to be. On the other hand, urate of ammonia is soluble in 480 times its weight of pure water, and in the state in which it occurs in urinary deposits, it requires for its solution 2789 parts of urine, according to the researches of Dr. Bence Jones, who further shows that the presence of a moderate quantity of saline matter, such as urine usually contains, increases the solubility of urate of ammonia.

The state of the argument, therefore, stands thus:—Eight grains and one-tenth of uric acid (8.1) are normally secreted in twenty-four hours. These require only 0.82 grains of ammonia for saturation or conversion into urate of ammonia; and the 8.92 grains of urate of ammonia thus formed may be held in solution by less than half a pint of water, or about one-fourth of the quantity separated from the blood by the kidneys.

Further, by slow evaporation of healthy urine in the air-pump vacuum—in other words, by diminishing the amount of the solvent—the urine becomes turbid from clouds of urate of ammonia, which ultimately subside in minute spherical masses on the sides of the vessel. The same effect takes place when urine of high gravity is exposed to cold.

From all these various facts the inference of Dr. Prout, that uric acid must be combined with ammonia, in order to be conveyed without the system, seems in the present state of knowledge indisputable.

On the other hand, it is maintained by Becquerel and some other authorities, that the uric acid is free, and that, were it not so, a single drop of nitric acid would not be sufficient to precipitate the uric acid contained in a considerable quantity of urine, as is the case. Dr. Bird justly observes that this objection is more apparent than real; for while so small a quantity of ammonia is required to render the uric acid soluble, viz. about two-tenths of one grain in half a pint, it is easy to see that, if this be neutralized, which it is by eight-tenths of one grain of nitric acid, or less than one drop, the objection entirely disappears.

How, then, are we to explain the natural acid reaction of healthy urine? Is it not owing to free uric acid? Or is it owing to the lactic acid of Berzelius, and the presence of which is maintained by Cap and Henry. To the last it cannot be owing, because that is shown to be, if we believe Gregory and Liebig, not present in urine; and what was taken for it and the lactates is now believed to be organic matter, the exact nature of which is not ascertained, but which contains both kreatine and kreatinine. The difficulty appears to be elucidated, if not fully explained, by some researches of Professor Liebig on the mutual reactions of uric acid with alkaline basic phosphates. It is known that a watery solution of the common or the basic phosphate of soda exerts an alkaline reaction on litmus paper. If uric acid be heated with such a solution, it is dissolved by reason of combining with part of the soda, and setting free part of the phosphoric acid, which is supposed to form a supersalt with some of the undecomposed phosphate. The fluid in this state reddens litmus paper. On cooling, the phosphoric acid reacts on the urate of soda, and about one half the uric acid is deposited in fine prismatic crystals, resembling in shape some varieties of uric acid sand. These crystals are not, however, pure uric acid, but contain chemically combined some phosphate of soda, of which they are not deprived either by boiling water or hydrochloric acid. The addition of an acid to the fluid decanted causes the deposition of uric acid in tabular crystals. These facts, and the inferences deducible from them, Dr. Bird thinks quite adequate to explain the natural acidity of urine, and the deposition of crystals of impure uric acid on cooling. All that this requires is to suppose that the .398 of one grain of uric acid, the average quantity existing in 1000 grains, are dissolved in about 2.5 grains of tribasic phosphate of soda, the proportion of this salt found by Simon in 1000 grains of urine.

The deposits frequently found in the urine, on cooling by evaporation in vacuo, or exposure to a freezing mixture, are, however, neither always crystalline nor composed of uric acid alone. They were shown by Prout to consist of urate of ammonia, more or less tinged with colouring matter; and they are or may be amorphous and readily soluble in warm water, which scarcely acts on uric acid. Hence another explanation, or one which accounts for the formation of urate of ammonia, becomes requisite. This Dr. Bird thinks may be found in the presence of the microcosmic salt or double phosphate of soda and ammonia, and the action of uric acid thereon. When to a warm solution of this triple phosphate, uric acid is added, urate of ammonia is formed, and phosphoric acid is evolved, either free or combined with a base, and forming an acid salt. This urate of ammonia is not decomposed on cooling, but is deposited in delicate microscopic needles, readily redissolving on the application of heat, if sufficient water be present. On adding urine to a warm solution of these acicular crystals, they are deposited on cooling combined with the colouring matter of the urine, completely amorphous, and presenting all the characters of the commonest forms of urinary deposits. This experiment seems to show that the presence of the microcosmic salt or triple basic phosphate of soda and oxide of ammonia causes the deposition of urate of ammonia, while the colouring matter renders the deposit amorphous.

Dr. Bird then proposes, as probable, the following explanation of the mode in which uric acid exists in healthy urine,—"Uric acid, at the moment of separation from the blood, comes in contact with the double phosphate of soda and ammonia derived from the food, and forms urate of ammonia, evolving phosphoric acid, which thus produces the natural acid re-action of the urine. If the whole bulk of the urine be to the urate of ammonia formed not less than 2701 to 1, the secretion will, at the ordinary temperature of the air, remain clear; but if the bulk of fluid be less, an amorphous deposit of the urate will take place. On the other hand, if an excess of uric acid be separated by the kidneys, it will act on the phosphate of soda of the double salt, and hence, on cooling, the urine will deposit a crystalline sediment of uric acid sand, very probably mixed with amorphous urate of ammonia, the latter usually forming a layer above the crystals, which always sink to the bottom of the vessel."

On the question of the physiological origin of uric acid, the author gives the opinion of Liebig, Lehmann, Zimmermann, and Heller; but as all are more or less open to objection, it seems useless to reproduce them. It is sufficient to say that the hypothesis of Liebig, which is supported by Zimmermann, is at variance with several well-known and established facts. The professor of Giessen, in short, in his anxiety to demonstrate the all-powerful and constant action of oxygen within the system, has carried that doctrine to its uttermost verge; for, if all be correct that he states to be, especially as to the influence of oxygen in effecting metamorphosis of tissue, then would it follow that man and several other animals would be in the constant danger of being oxydized to death. It may be the fact, that the constant introduction of oxygen does produce a slow consumption or combustion of all the tissues, and thus hastens the death of the animal. But on the other hand, that doctrine seems highly questionable, which, in explaining certain physiological processes in the human body, is opposed to facts and daily observation. In truth, were the views of Professor Liebig correct, the proportion of uric acid ought to be increased when the food taken is rich in carbon, and to diminish if the individual confined himself to a nitrogenous diet, or in other words, lived solely on animal matters. Now, the contrary of this is known to be fact by all observation and all experience.

What are the facts in this case? Are they not that the proportion of urea and uric acid is increased when the food *cæteris paribus* consists merely of animal matter, and diminished when the food is made to consist of vegetable matter? This was clearly shown by the experiments of Magendie and many others, and accurately ascertained by experiments by Lehman on himself, who found that under a diet strictly animal, 11.4 more grains of uric acid were excreted in 24 hours, and 582.1 grains more urea were discharged from the system, than when living on vegetable food.

Edinburgh Medical and Surgical Journal, Jan., 1848, *p.* 145.

60.—*On the Pathology of Diabetes.*—By Dr. R. B. Todd, F.R.S.—For all practical purposes we may, in the present state of our knowledge, adopt with advantage the following view of the pathology of diabetes:—That it is primarily a disease of the mucous membrane of the stomach, whereby an abnormal diastase is formed, which readily converts into sugar such aliments as admit of that conversion; the mucous membrane probably likewise secretes sugar; the sugar thus formed passes into the blood, and is rapidly eliminated by the kidneys, causing at the same time the attraction to those organs of the elements of a large quantity of water. This theory essentially agrees with that put forward many years ago by our countryman Dr. Rollo, who was the first to point out theoretically, as well as practically, the importance of a diet consisting mainly of animal food in this disease.

Provincial Medical and Surgical Journal, April 5, 1848, *p.* 169.

61.—*On the Use of the Polariscope in Testing Urine.*—By Dr. J. S. Bushnan.—Having lately had occasion to make some experiments with the polariscope, to ascertain the presence of sugar in urine, I venture to describe and recommend the instrument, which consists of a glass tube sixteen inches long, and capable of being hermetically closed at each end by means of a small plate of glass secured by a brass ring and screw. After having completely filled the tube with the fluid about to be examined, which is done by holding it vertically—taking care that no globule of air shall be introduced—and then closing it, a ray of linearly polarised light is made to traverse it, by fixing to its extremity, directed towards a white cloud, either a Nichol's prism, or a crystal of double-refracting power, as a tourmaline cut parallel to its axis. A second prism, or a second tourmaline, fixed at the other extremity to which the eye is applied, permits us to see, through a circular division, in what degree the direction of the polarised ray is turned aside by the action of the liquid; and the angle thus formed is proportional to the length of the tube and to the quantity of active molecules, that is to say, to the density of the sugar, which seems to be the only active substance contained in the urine. As the fluid is generally high-coloured and of feeble action, it is not possible to observe the colours developed by the unequal action of the liquid upon the different particles of white light; and consequently it is unnecessary to employ Nichol's prisms, which, besides, are not always to be obtained. The two tourmalines are quite sufficient, provided they are not too highly coloured; and it is very easy to observe the total disappearance of the ray of light, when, by turning the eye-piece, the tourmalines are made to cross each other at right angles. In placing the tourmalines in this position before the introduction of liquid into the tube, the index of the circular scale attached to the eye-piece being at the same time placed at zero, no ray of light is seen, while the use of an active fluid causes it to reappear more or less distinctly. On slightly turning the eye-piece with its contained tourmaline either to the right or to the left—and as it is turned the angle formed is marked by the index on the scale—we find that at a certain point the former obscurity is re-established; and it is the angle obtained at the moment the ray of light disappears and the obscurity is complete, that determines the quantity of saccharine matter contained in the fluid.

A circumstance unfavourable to this kind of research, is the commonly incomplete transparency of the urine, even after repose and filtration. Urine apparently limpid, when placed in the tube seems anything but clear; and a quantity of diffused light, mixing with that regularly transmitted, further impedes distinct vision; nevertheless, even when in some degree turbid, it is always possible, although with some indistinctness, to perceive the action of the ray transmitted through the tourmalines and saccharine urine.

As it seems to me, this process is much superior and far more simple than that recommended by M. Biot, employed by M. Bouchardat (Repertoire Générale des Sciences Médicales, vol. xviii.), and described by Dr. Golding Bird *(urinary deposits)*, to detect sugar in urine by its action on polarised light. The instrument is less complicated; and, besides which, saccharine urine is seldom sufficiently clear to allow the colours produced by circular polarisation to become visible. Again, it is at any rate preferable to the usual modes of testing suspected urine, since no long and complicated chemical manipulation is required; the presence of sugar can be ascertained at once, and, if needs be, in the presence of the patient; and, when ascertained, its increase or decrease can be determined during the progress of treatment, by the greater or lesser angle obtained by the altered direction of the polarised ray passed through the fluid—the greater the quantity of sugar, the greater being the angle indicated upon the scale.

Medical Times, March 25, 1848, *p.* 424.

62.—*Turpentine in Diabetes.*—[An anonymous contributor to the Lancet, stating that he has a patient who has had diabetes for ten months, during which the minimum quantity of water passed daily was nearly two gallons, goes on to say,]

About six weeks since alarming hæmoptysis appeared, (phthisis having supervened), to relieve which I administered spirits of turpentine. With the first dose the quantity of water diminished greatly, and after she had taken two or three doses of turpentine the urine was passed in its normal quantity, though not in its normal condition, as I could still obtain sugar by evaporation. I regarded this improvement in the diabetes as a mere coincidence, but on withdrawing the turpentine the water again increased, and that dreadful thirst, which had been absent, returned.

As the quantity of urine passed continued in very large quantity, I again had recourse to turpentine in the form of Chio turpentine. Instantly, as by magic, the quantity of urine decreased, has remained so, and I well know, that were I to omit the turpentine for one day, two gallons and a half of water would be the result.

Lancet, Jan, 29, 1848, *p*. 136.

63.—*Remarkable Case of Disease of the Bladder.*—By H. Hancock, Esq.—A patient was admitted into Charing-cross hospital, reported to have stone in the bladder; but Mr. Hancock could not obtain any professional account of his previous illness. When admitted, he laboured under a stricture of the urethra, but had no symptoms of stone. He had a cicatrix in the perinæum, where had previously been a fistulous opening. Mr. Hancock introduced a catheter, but did not feel any calculus, and was therefore inclined to believe that none was present. He went on dilating the urethra, and when he was able to introduce a No. 9 catheter, he for the first time felt a grating, but it was on the concave surface of the instrument. The urethra continued to be dilated until No. 11 or 12 could be introduced. A consultation was held on the case, and though care was taken not to let the patient know anything of the result, he was so alarmed at the anticipation of an operation, that he became extremely ill and desponding, and died within a week, in a state of coma. Mr. Hancock performed the operation of lithotomy on the dead body. On making an incision, a small calculus presented itself in the wound, and he could feel no other stone. He then removed the bladder and surrounding parts. The bladder was thickened and contracted, and turned up over the pubes. It was entirely filled up with a pear-shaped stone, the smaller end of which projected through the prostatic portion of the neck of the bladder, and articulated with the smaller calculus which had presented itself at the wound. In the preparation there was a large cyst, communicating with the contracted bladder at its neck. The bladder having been unable to obtain any urine, this cyst, which had probably had its origin in an urinary abscess, had performed the functions of the bladder, having assisted to discharge the urine by the levator ani, which was much enlarged and thickened. He did not know of a similar preparation, or of a similar case on record. The kidneys in this case were very much disorganized, and the urine was generally acid and clear.

Lancet, March 18, 1848, *p*. 312.

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SURGERY.

FRACTURES AND DISEASES OF BONE.

64.—HINT ON THE TREATMENT OF FRACTURES.

By Bransby Cooper, Esq , F.R.S., &c.

[Mr. Cooper observes that bones like all the other organs become increased in size by exercise, and that we should take advantage of this principle when we wish to excite the deposition of bony matter. Speaking on this subject he says,]

There can be no doubt that this increase is dependent on muscular action, and therefore nature points out a most important fact to be judiciously used in the treatment of fracture of bones, which is, that a patient is not to be kept too long inactive; and although rest and the recumbent posture are most essential in maintaining coaptation for a certain time, yet frequently it will be found that the employment of the muscles, and the effect of the weight being thrown upon the injured limb, is often the most ready and efficient mode of inducing ossific deposition. I certainly have frequently seen the union of a fractured bone much retarded by too protracted a confinement to bed, and have as often hastened the reparation by desiring the patient to get up, and throw a portion of his weight upon the disabled limb: I need scarcely tell you, gentlemen, of the necessity to protect the broken bone at the same time by well-adjusted splints. You will not only find after their continued exertion, the bones increased in size, but the muscles and the arteries also; and the whole apparatus for the nutrition of the limb is in the highest state of perfection, to sustain the additional call made upon it in the performance of its required duties.

Indeed, it is a similar condition to that kind of inflammation which is sometimes spoken of under the term "formative inflammation," an example of which we constantly find in the periodical increase of the vessels during the annual growth of the stag's horn, and of the spermatic arteries of those animals that have only certain seasons for procreative desire.

Medical Gazette, Nov. 26, 1847, *p.* 913.

65.—*On Mollities Ossium.*—By Bransby Cooper, Esq.—[This disease, depending immediately upon the want of the mineral constituents of bone, may arise either from a want of power in the organs of assimilation and absorption to take up the phosphate of lime contained in the food, or from the food itself not containing enough phosphate of lime to furnish the required supply. It is well known that when common fowls are prevented from getting lime, their eggs will be without shells, but on restoring the lime, the eggs regain their earthy covering. On the same principle Mr. Cooper proposes to treat mollities ossium: he says,]

I have on two or three occasions certainly had reason to believe that great benefit was derived from giving bone powdered and mixed with bread, and at the same time draughts containing phosphoric acid, which converts phosphate of lime into a biphosphate, a more soluble salt than the phosphate, and probably much more readily assimilated. The result of this treatment was certainly such as would warrant the just expectation of facilitating the nutrition of bone.

You will find, that it will require some moral courage to recommend such chemical treatment; for you must expect the jeers of the sceptical and ignorant, whose reasoning powers never carry them beyond the empirical treatment handed down by the authority of their predecessors. I have *demonstratively* proved to you, I think I may say, over and over again, the advantages of applying phosphoric acid to exfoliating bone, to produce its rapid removal upon a principle precisely similar. These considerations will, I trust, lead you to perceive at once that the diseases of the osseous system are not in any way independent of the general laws which regulate the morbid conditions of every structure in the body, but that they are as completely subject to all the phenomena of nutrition and deterioration as the rest of the organismus.

Medical Gazette, Nov. 26, 1847, *p.* 913.

66.—*On Distortions of the Spine.*—By Bransby Cooper, Esq.—[When these distortions arise from softening of the bones, Mr. Cooper repudiates the use of all such mechanical means as prevent the patient from taking gentle exercise in the open air. He says,]

The disease is a constitutional defect in healthy nutrition, and can be remedied only by the improvement of the general health, although it is true the application of simple mechanical means may aid this object so long as it does not interfere with the natural and vital functions of life. Use common sense, therefore, and bear in mind however the preponderance of physical disturbance to the natural functions of the spine may attract your attention, this state is only a result of a general constitutional deterioration, and that without the improvement of health no good can be effected. The remedies must (to be useful) be directed to the removal of the cause of the disease, and not to the effects. You should do all you can to strengthen the assimilative powers; and as there is every reason to believe that the nutrition of bone is most at fault, means should be adopted, as far as diet and medicine can avail, to remedy the evil. Such diet, for instance, should be enjoined as contains most phosphate of lime: beef and mutton, and what is termed secondary bread, are therefore advisable: and phosphoric acid should at the same time be prescribed for the purpose of its union with the lime, rendering it capable of being more easily absorbed. Bottled porter will also assist in improving the constitutional powers of the patient; and care should be taken that the bowels are not relaxed so as to carry off the lime too quickly, instead of leaving it to be taken up by the absorbents of the intestinal canal. The physical treatment indicated is to support the weight of the trunk by the most simple mechanical means competent to relieve the affected bones; and such muscles should be put into gentle action as have a tendency to counteract the unnatural direction the bones may have acquired from the influence of the existing abnormal causes, viz., the undue disposition of the weight and altered muscular action.

Patients labouring under this affection should be frequently in the open air, and they should be permitted to take gentle exercise, but they must avoid most cautiously the slightest fatigue either of body or mind; riding in an open carriage, or sailing on the sea, is the very best kind of recreation which can be adopted.

Medical Gazette, Nov. 26, 1847, *p*, 917.

DISLOCATIONS AND DISEASES OF JOINTS.

67.—A CASE OF OLD DISLOCATION OF THE RADIUS SUCCESSFULLY REDUCED.

By Dr. J. Stark, Edinburgh.

[A little girl, aged nine years, fell from a table and hurt her elbow; but the true nature of the injury was not ascertained until two years afterwards, when Dr. Stark was called to attend the child for an attack of chicken-pox. The form of the joint then attracted his notice, and he immediately recognized a dislocation of the head of the radius forwards. The little girl carried her arm as if it were paralytic, and it was indeed almost useless: but the only bone which appeared to be altered in form was the external condyle, which was diminished in size, and its sharp edges rounded. Dr. Stark says,]

Two question then presented themselves for consideration. First, Was it prudent to meddle at all with such an old dislocation? Secondly, If so, and the reduction should be effected, was there any change of the restored joint proving as serviceable as even the preternatural one now formed, seeing that the articular surface of the humerus was so altered in shape?

On consulting the writings of Flaubert, Marx, Sir Astley Cooper, and Dupuytren, who more especially treat of the reduction of old dislocations, it was ascertained that these able surgeons coincided in opinion, that ball and socket joints could be reduced at a much later period of time after the occurrence of the dislocations than hinge-joints; and yet, of even these joints they limit the period, during which it is either safe or possible to reduce them, to a few months. In the case of hinge-joints (as the elbow) they unanimously agree, that within a very short period after dislocation, they become irreducible, without using such an amount of violence as to tear across muscles, nerves, and blood-vessels, and thus endanger life by rendering amputation of the limb necessary.

With regard to the particular dislocation now under review, Sir Astley Cooper relates, that during his extensive practice he had only seen six cases. Of these, four were unable to be reduced, though the most varied and violent efforts were used. The other two were reduced. In my own practice, only two cases of dislocation of the head of the radius forwards had previously been met with. In the first case, the woman fell over a window three stories in height, and, besides other injuries, received a compound fracture of the condyles of the humerus, with displacement forwards of the head of the radius. In consequence of the injury to the soft parts, and the fracture of the condyles, the head of the radius could not be retained *in situ*, and when the cure was effected, the *callus* had formed a new socket for the head of the radius, and it was not considered prudent to interfere with it. From the head of the radius moving in a bony socket, the arm soon afterwards became quite strong, though it never could be bent so as to allow the fingers to touch the face; and the woman, by occupation a washerwoman, was able to prosecute her usual employment. In the other case, the accident occurred from falling on the ice, alighting on the hand; and the reduction was easily effected by pulling by the hand, and bending the fore arm on the arm, when the head of the radius was brought to the edge of the articular surface of the humerus, at the same time pressing down the head of the radius with the thumbs.

In the present case, the child was of a soft lax fibre, and as the arm was comparatively useless and weak, it was wasted or much softer, thinner, and less muscular than the sound arm. Provided, therefore, that the extension was applied gradually, and care was taken not to employ such violence as would cause the rupture of muscles, nerves, or blood-vessels, there appeared to be nothing to contraindicate an attempt at reduction. The consideration of the second question seemed still further to indicate that an attempt ought to be made to reduce the dislocation The present state of the arm was a constant source of annoyance. It was disfigured in shape, was weak, and comparatively useless. As the head of the radius was uninjured and normal in form, it was not considered any objection that the external condyle of the humerus was somewhat altered in form, seeing that it was probable that when the bones were put *in situ*, that part would recover its former size and structure. By effecting the reduction, therefore, there was every chance of the limb being rendered more useful than it had been since the period of the dislocation.

As from the cases related by Flaubert, Marx, and Dupuytren, it appeared that the chief danger in reducing old dislocations arose from the risk of rupturing the muscles, blood-vessels, or nerves, by employing violent efforts at reduction, it was determined in this case to extend the arm firmly, but gently, day by day, till the new adhesions of the head of the radius were so much lengthened, or the head so loosened from its new site, that, by the employment of not much additional force, the bone would at last be put into its proper place. The extension was effected by seizing the hand of the patient with the right hand, bending the elbow-joint so that the fore-arm formed a right angle with the arm, and applying the counter-extension by passing the left hand close above the elbow-joint, and thus fixing the humerus. The extension was then continued till slight uneasiness was complained of. This was repeated daily from the 12th May till the 2nd of June 1847. By this time the head of the radius had become quite loosened, and could be pulled to the edge of the articular head of the humerus. On the 2d of June, therefore, I made the extension and counter-extension myself, and when the head of the radius arrived at the edge of the articular surface of the humerus, allowed the ball of the thumb of the left hand to press against it; when bending the fore-arm on the arm, the bone quietly slipped into its place. The head of the radius was found to have a strong tendency to slip out of its place and return to its former situation in front of the elbow-joint, partly on account of the altered form of the condyle of the humerus, partly from the cavity of the joint being filled with the forementioned elastic fibrous deposit. The arm was therefore kept much bent, and the hand tied up across the chest, so that the tips of the fingers almost touched the opposite clavicle.

[In about a fortnight slight passive motion was commenced, and after a further interval, the forearm was allowed to be lowered: great care and attention were bestowed upon the case, to keep the head of the radius in its place: and in October the cure was nearly perfect, the arm affected being nearly as strong as the other. From this case Dr. Stark thinks we may learn some lessons with regard to old dislocations generally,—that an old dislocation when properly managed may be successfully reduced, even when some alteration has taken place in the form of the bones, or when the joint has become more or less completely filled up:—and that the extension in such cases should be made slowly and gradually day after day, so as to loosen the attachments of the artificial joint, and lengthen the muscles, nerves, blood vessels, and ligaments; so that when the final pull is given, there may be no risk of laceration.]

Edinburgh Medical and Surgical Journal, Jan. 1848, *p.* 77.

68.—*Dislocation Reduced under the Influence of Chloroform.*—By W. B. Page, Esq., Surgeon to the Cumberland Infirmary.—[This was a case of dislocation of the left humerus into the axilla, of eleven days standing, occurring in an athletic railway labourer.]

An attempt was at once made at reduction by means of the heel in the axilla, but without any sensible effect being produced. Two hours after he was seen by Mr. Page, who directed that the same means should be again employed, the patient being placed under the influence of chloroform; accordingly, the man being placed on a couch, about a drachm sprinkled on a handkerchief was held before his face, which speedily induced a state of perfect unconsciousness. The heel was placed in the axilla, and extension made from the hand, the operator receiving no additional aid from pulleys, or any other person, and in two minutes the head of the bone resumed its lost seat on the glenoid cavity of the scapula. After the first few inhalations there was a great tendency to violence, which continued for some seconds, and during the whole time that extension was continued he talked incessantly, and most vociferously. He soon recovered his sensibility, and said that he had dreamt he was falling down a precipice, but had felt no pain.

Provincial Medical and Surgical Journal, Feb., 23, 1848, *p.* 97.

69.—*On Luxation of the Semilunar Cartilages.*—By J. P. Vincent, Esq.—[The internal cartilage is most frequently luxated, and the accident is marked by the joint becoming locked, on some quick motion of the trunk about the axis, on one leg: sometimes there is great pain, and a slight projection of the cartilage beyond the margin of the head of the tibia. With regard to the treatment, Mr. Vincent tells us that,]

The true way of manipulating here, is to place the patient on his affected side, with the limb bent, and then to rotate gently the tibia on its axis. In this position the joint is loose, making no pressure on the cartilage, and it has the best chance of quietly slipping into its place. I have often known in this luxation, when left alone, that whilst the patient was asleep the cartilage has slipped into its place after a few days. A medical gentleman in the country came to me, not long since, to confer with me about a case of this sort in a patient of his, a miller. He had tried every experiment in vain. I assured him he might make his mind easy, and go back and try to keep the miller in bed, and it would slip into its place while the man was asleep. He very soon wrote to me word, that to his joy, it happened as I had predicted, even though he could not prevent the miller going into his mill. I have seen great violence used in efforts to reduce the cartilage to its place, but all to no purpose. If the gentle rotatory motion does not succeed, the only thing is to keep the patient in bed, and in some of his slumbers all will come right. Of course, if this accident has once occurred, it will be liable to happen often.—*Vincent's Observations on Surgical Practice.*

Medical Gazette, Jan. 14, 1848, *p* 65.

70.—ON LOOSE CARTILAGES IN JOINTS.

By Bransby Cooper, Esq., F.R.S.

The synovial membrane is sometimes subject to abnorma growths, the most frequent of which consists in a pulpy structure first described by Sir Benjamin Brodie, and which is so similar to the prolongations I mentioned when speaking of the cases in which the articular cartilage has become absorbed, that I can only regard it as a reparative effort on the part of nature to check the deteriorating process in the latter structure, for where I have had the opportunity of examining a diseased joint after amputation, I have invariably found these prolongations or abnormal growths of synovial membrane to be concomitant with progressive morbid change in the articular cartilage: sometimes small pendulous processes are found in the synovial capsule, and on them is imbedded a tissue resembling cartilage in every respect. They often grow to a considerable size before they become detached, in which latter state they are termed loose cartilages.

While they remain fixed to the membrane they are productive of but little inconvenience, but when detached they frequently get between the articulatory surfaces of the joint, and suddenly prevent its motion, causing considerable pain, and inducing so much inflammation, that very active treatment is required to subdue it.

While this extraneous body remains in the joint, the patient is always liable (under exertion) to suffer from its interference; hence it becomes necessary to resort either to palliative treatment, or to attempt the radical cure of the disease. The most usual, and perhaps the safest plan, is to endeavour by careful manipulation to expel the loose cartilage from the field of motion of the joint, and to prevent its return by a knee-cap contrived for the purpose, taking care that the patient does not attempt to walk without this protective appendage. Radical cure can only be effected by the performance of an operation for the complete removal of the loose cartilage by actual excision; this is a somewhat formidable operation, and the patient should be well prepared for it by previous constitutional treatment, so that he may be the less liable to the accession of subsequent inflammation.

In performing the operation, the surgeon should press the loose cartilage to the outer side of the joint between the patella and external condyle; it should be firmly confined to that situation by means of a ring, such as the bow of a large key, which when pressed upon the part will prevent its slipping away again into the joint. The skin over the cartilage must be drawn downwards as far as its elasticity will permit, and held in that manner while a firm incision is made through all the integuments at once upon the cartilage, which is generally forced out by the tension of the neighbouring parts. The skin previously drawn downwards may now be released, and when it has returned to its natural position, the incision through it will be found to be no longer in apposition with that in the synovial membrane, and the subsequent escape of synovia, and atmospheric influence on the wound in the synovial capsule, completely prevented. Over the external incision white of egg may be applied, and a strip of adhesive plaster above that. I recommend the albumen, as it causes no irritation, and also prevents the stimulating effects of the resinous plaister. A splint should be applied behind the joint, so as to ensure the most perfect state of rest; evaporating lotions may also be employed, and constant watch kept for the slightest symptom of inflammation, in order that it may be combated at the first moment of its appearance. In spite of every precaution, however, violent inflammation frequently follows the operation I have just described, leading to extensive suppuration in and about the joint, the consequence being, the loss either of the limb or life of the patient. In the course of my practice, I have performed the operation for extirpation of loose cartilage three times: in the first with perfect success, not one untoward circumstance occurring: in the second, violent inflammation followed the operation, and anchylosed joint was the result. In the third case, suppuration supervened, and the constitution of the patient became so much affected as to render amputation inadmissible, and he sunk, after protracted suffering, the victim of hectic fever. Another method of operating for the removal of loose cartilage has been proposed within the last few years, and I consider the mode of procedure much safer than that adopted under the old plan.

A narrow-pointed bistoury is inserted in the skin at some distance from the loose cartilage, and pressed onwards until it reaches the point at which that body is situated. The cutting side of the knife is then turned towards the joint, and the synovial membrane divided to a sufficient extent to admit of the loose cartilage being forced out into the subcutaneous cellular tissue, where it is allowed to remain until the wound in the joint is healed; it may then be removed by a mere incision through the skin. The same prophylactic treatment must be resorted to in this as in the other description of operation, and also similar means of subduing inflammation, if it should already have commenced.

Medical Gazette, March 17, 1848, *p*. 441.

71.—*On the Treatment of Chronic Arthritis.*—By MM. Guerard and Briquet.—At the Hotel Dieu and La Charité hospitals in Paris, MM. Guerard and Briquet employ in chronic arthritis following acute rheumatism, or any other cause, an ointment contain ing nitrate of silver. At the Hotel Dieu, five parts of the nitrate are rubbed down with thirty-two parts of lard. The articulation is well rubbed with it once a-day, and a poultice is then applied over it, to favour absorption. This treatment is continued until the disappearance of pain. The epidermis becomes shining, yellowish, or almost bronzed, and sometimes blackened, for some days. At La Charité the ointment is not so strong, and is composed of only one part of the salt to thirty-two of lard; but the good results are not so well marked. A similar treatment is at present followed by M. Jobert at St. Louis, in cases of white swelling.—*Annales de Thérapeutique*, Oct. 1847.

Monthly Journal, Dec., 1847. *p*. 438.

72.—*On Gonorrhœal Synovitis.*—By Bransby Cooper, Esq., F.R.S.—Patients suffering from gonorrhœa are subject to the attacks of a peculiar form of synovitis, which so closely resembles the rheumatic affection, that it is sometimes extremely difficult to distinguish between them; and indeed it is only from a history of the case that a just diagnosis can be formed. It usually happens in such cases that the gonorrhœal discharge ceases simultaneously with the accession of the disease to the joint; and it is of the highest importance that the former should be re-established as quickly as possible, the best means being the application of warm fomentations over the organs of generation. I have never known an attack of the above kind to occur unless the patient has taken copaiva, and am inclined to think that this medicine acts specifically on the synovial membranes; for I have invariably found the symptoms of inflammation greatly aggravated by its administration. Bark and alkalies, combined with opium, seem to be the most appropriate remedies, as colchicum does not afford relief. In these cases the latter circumstance constitutes a further distinction between gonorrhœal and rheumatic affections.

Medical Gazette, March 17, 1848, *p*. 440.

73.—*On the Diagnosis of Inflamed Ligaments.*—By Bransby Cooper, Esq.—If inflammation of ligament be primary, it may generally be diagnosed by the slight degree of swelling which occurs at the joint, and by the absence of acute pain while the patient is standing on the diseased limb in the erect posture. The least attempt at motion is, however, productive of severe suffering, and this constitutes an important distinction between disease of ligament, and that of synovial membrane or cartilage; as in the latter case, the most painful position is when standing upright, with the weight of the body pressing on the affected articulation.

Medical Gazette, March 31, 1848, *p*. 529.

74.—ON THE TREATMENT OF GANGLION.

By Bransby Cooper, Esq., F.R.S.

[After alluding to the usual plan of giving a ganglion a sharp blow with the back of a book, and to the fact that the walls of the cyst are sometimes too dense to be ruptured without employing a dangerous degree of force, Mr. Cooper says,]

I think it a better plan to pass a couching needle beneath the skin, introducing it at some distance from the ganglion, and, after puncturing the sac in several places, to squeeze the synovial fluid into the cellular tissue: pressure must be applied to the part, and a splint then adjusted, to insure perfect quiescence of the wrist-joint.

The smaller description of ganglia which sometimes occur on the palmar surface of the hand, at the extremity of the metacarpal bone, cannot be subjected to similar treatment to that just detailed, but must be punctured directly; the small quantity of synovia they contain being expressed from the opening.

In certain situations in the body it is extremely difficult to form a diagnosis of bursæ mucosæ: they are sometimes so hard as to be mistaken for small exostoses; and, by the enlargement of the bursa, between the latissimus dorsi muscle and the inferior angle of the scapula, a tumor may be formed, which might be readily mistaken for chronic abscess, steatoma, or even malignant disease; but a surgeon conversant with the character of ganglia in their natural state, would soon discover the real cause of the swelling.

On the feet, and more particularly on the inner side of the root of the great toe, an adventitious bursa, termed a bunion, is very frequently formed: it is produced by tight and ill-made shoes, which force the great toe into an unnatural position, out of the line of the axis of its metatarsal bone, and under the other toes, in such a manner that the bone of the first phalanx presses forcibly on the capsular ligament of the joint, and induces the inflammation and acute pain inseparable from this distortion. Unless the deformity be remedied, the continued pressure of the bone tends to increase the inflammatory action, and ulceration would be the ultimate result, were it not for the compensating provision of nature, which leads to the formation of a ganglion between the capsular ligament and the skin. If, however, the pressure be still continued, it may induce inflammation of the adventitious bursa, and an inflamed bunion is the consequence; this so completely cripples the sufferer, and the pain is so excessive, that surgical aid is here usually sought, although, however, various mechanical contrivances have been proposed, and also many different kinds of plasters, the object of all being to remove the pressure which has been the original cause of the disease. No treatment can prove successful, unless the great toe be restored to its natural relative position parallel with the others, and the most simple and effectual means of effecting this, is the one adopted by my colleague Mr. Key: he recommends that the stocking of the patient should be furnished with a division or compartment, resembling the finger of a glove, to receive the affected toe, a similar compartment being also constructed in the inside of the shoe: into these the toe passes, and is preserved in a direction parallel to that of the others: but it may be necessary before resorting to the use of this contrivance to subdue the local inflammation by the application of leeches, blisters, or evaporating lotions.

A ganglion on the dorsum of the foot or instep, sometimes produces even a more serious form of the disease than the bunion. It may cause contraction of the extensor tendons of the small toes, permanently extending the latter, so that the whole of the weight of the body falls during progression upon the first phalanges, in which situation ganglia are found precisely similar to that just described as occurring at the point of the great toe. If these become indurated by neglect or continued pressure, so that the effused contents cannot be let out by puncture, the only alternative left to the surgeon is to divide the implicated tendon or tendons, so as to relieve the permanent extension of the phalanges, and to restore the toes to their natural position. I have known exfoliations of the phalanx to occur as the result of this affection, but immediately upon the removal of the exfoliating bone, the deep ulcer which had been produced in the sole of the foot, healed, and the patient at once recovered.

Medical Gazette, March 31, 1848, *p.* 529.

AMPUTATIONS.

75.—NEW OPERATION ON THE FOOT.

By T. Wakley, Esq., Surgeon to the Royal Free Hospital.

[In a case of caries affecting the astragalus and os calcis, and appearing to be confined to those bones, Mr. Wakley, at the urgent desire of the patient, resolved to dissect them out.]

The operation was performed on Monday last, December 27th, in the presence of between forty and fifty practitioners. The operator was ably assisted by Mr. Gay, his colleague, and Mr. Erasmus Wilson. The man having been placed on the operating-table, Mr. Robinson administered the chloroform, when a complete state of insensibility was soon induced. The diseased foot (the left) having been drawn forwards, so as to be free of the operating-table, Mr. Wakley, standing directly in front, and holding the scalpel in his left hand, made an incision from the prominence of the *internal* malleolus backwards and downwards to the middle of the heel. A similar incision with the right hand was then made from the *external* malleolus, downwards and backwards, to join the foregoing. A third incision was next carried along the edge of the sole, from the middle of the first to a point opposite the astragalo-scaphoid articulation; and a fourth on the opposite side of the sole, from the vertical incision to the situation of the calcaneo-cuboid joint. These latter incisions enabled thd operator to make a flap of about two inches in length from the under part of the sole. In the next place a circular flap of integument was formed between the two malleoli, posteriorly, the lower border of the flap reaching to opposite the insertion of the tendo-Achillis. This flap being turned upwards, the tendon was cut through, and the os calcis having been disarticulated from the astragalus and cuboid bones, was removed, together with the integument of the heel included between the two incisions. The lateral ligaments connecting the astragalus with the tibia and fibula were now divided, and the knife was carried into the joint on each side, extreme care being observed to avoid wounding the anterior tibial artery, which was in view. The astragalus was then detached from the soft parts in front of the joint, and from its articulation with the scaphoid bone, and the malleoli of the tibia and fibula were removed with the bone nippers. The only artery requiring ligature was the posterior tibial. During the few minutes the operation occupied, the patient did not manifest the slightest symptoms of pain or uneasiness.

On bringing the edges of the flaps together, they were found to fit with complete accuracy, and were secured by twelve points of interrupted suture. They were supported by several folds of lint, and by means of a light bandage.

The patient who had lost but very little blood, was then removed to bed. Six P.M.: the patient feels a little pain, and is weak; no bleeding from the wound. Twelve o'clock: has been dozing; complains of pains; no hæmorrhage. Ordered, a grain of morphine.

Dec. 30th.—Union by first intention has taken place everywhere, except the inner side of the foot. The man is doing well, no bad symptom having presented itself.

Lancet, Jan. 1, 1848, *p.* 8.

76.—ON THE AMOUNT AND CAUSES OF THE MORTALITY OF OPERATIONS.

By Dr. Fenwick, Lecturer on Pathological Anatomy, at the Newcastle-onTyne School of Medicine.

[At p. 189 of our last volume, the reader will find an abstract of a very interesting paper, by Dr. Fenwick, on the statistics of amputations as observed at the Newcastle Infirmary, and compared with published accounts. In a continuation of his paper, Dr. Fenwick, in considering the success of an amputation as influenced by the duration of the disease for which it is performed, remarks,]

The maxim has been laid down by an eminent surgical authority, that, in amputations for diseased joints, "the shorter the duration of the disease, and the less the system has suffered under it, the greater is the chance of recovery after amputations, and *vice versâ.*" As no facts of any importance are brought forward to verify this assertion, I considered its correctness well worthy of investigation. It would, indeed, seem probable, that if a person labouring under a disease of a scrofulous nature, have less tendency to secondary diseases after an amputation, than an individual in robust health, and the more the strength of a patient be reduced, the less will be his risk from these causes of death, and the only increase of danger he will be exposed to by his debility, will arise from exhaustion. But as in a former table we found that, in practice, but a small proportion died from shock or subsequent weakness, we might, from theory, reasonably feel inclined to call in question the truth of the assertion I have before quoted.

[From a table of amputations performed for diseased knee and ankle joints at the Newcastle Infirmary, classified according to the number of years the disease had existed, the author shows that,—]

Instead of the mortality being less in those cases of amputation in which the disease was of only one year's duration, it is greater in them than in those of any subsequent class. Rejecting the deaths occurring during the first four days as probably produced by shock, we find that 1 in 5·75 died after that period in those whose disease had existed one year, whilst among those who had been affected between one and four years, none perished out of 27. Those who had suffered from disease for more than five years have been classed together, on the supposition that, as in some the complaint had existed for a very long period, the health would probably be but little affected, and that they had required the removal of the limb, rather on account of its inconvenience or deformity, than for the preservation of life. But as we before observed, that the greater number of deaths of persons submitting to amputation, and occurring after the period of shock, was produced by inflammatory or suppurative diseases, it is evident from this table that such patients as have laboured under diseased joints between one and five years, are less liable to be attacked by those complaints after the operation, than others who have been affected either within one year, or for a greater length of time than five years. If these results should be confirmed by other observations, the information to be derived from them will be exceedingly valuable; for it will appear that the impatience of the surgeon will be more generally to be dreaded, than danger from delay. I have seen more than one individual obtain a useful joint, where excellent surgeons had urged the necessity of amputation, and declared recovery without it as impossible; and I have on more than one occasion dissected joints, in which the knife of the operator had interfered, whilst nature was safely accomplishing anchylosis. The number of amputations performed for this class of diseases is every year decreasing as more simple and effectual methods of treatment are employed; and we have good reason to hope that, in a few years, the removal of a limb for a diseased joint will be as rare as it was formerly common.

The time required for recovery after the operation seems to have a certain relation to the amount of death; thus, in those in whom the disease had existed only for one year, the time of cure was fifty-six days; in amputations performed upon those who had suffered between one and two years, it was 44·6 days; in those the duration of whose disease was between two and five years, it amounted to thirty-eight days; and of those who had been invalids above five years, it required 53·5 days to complete the cure.

From the above facts the natural conclusion appears to be, that so long as the life of the patient is not placed in immediate danger by his disease, we shall best consult his interest by deferring the operation, since, besides giving him a greater chance of a natural recovery, the amputation will be more successful, and less time will be required to heal the wound in case it be eventually required.

[Dr. Fenwick next enters upon the question of the proper time for amputation after the infliction of an injury. In settling this point, the comparative chance of death in pathological and traumatic amputations should have but little weight; the results of practice alone should be relied upon. Tables of primary and secondary amputations performed at the Newcastle and other civil hospitals and in military practice, are given; and Dr. Fenwick then says,—]

It has always appeared to me, that the mere knowledge of the amount of death following primary and secondary amputations, is not of much importance in enabling us accurately to determine the question of their comparative value. The original point of dispute appears to have been, whether the surgeon would save most lives by amputating a limb immediately after the infliction of an injury, or by deferring the operation to a future period. If, then, we imagine amputation deferred in twenty cases of serious accidents, in which the powers of nature are obviously unable to repair the injury, the question to be decided must be, not so much as to the mortality which will occur amongst those on whom the secondary operation is performed, as the number of the patients who will reach that state in which the limb can be removed. For if a person suffer a compound fracture, or other severe injury, he becomes liable to attacks of phlebitis and visceral diseases, in the same manner as if he had undergone amputation. Some have supposed, that by obtaining the number of deaths which have resulted amongst any number of compound fractures treated without amputation, we might calculate the proportion which would perish out of an equal number of cases deferred for secondary amputation.

But it will be observed that, as the cases of compound fracture treated without amputation are selected as likely to terminate well, they can afford us no guide as to the mortality which is likely to occur from diseases amongst accidents of a more severe character.

From the great danger to which every day's experience teaches us, severe accidents are liable before secondary amputation can be undertaken, the conclusion is manifest, that we cannot be justified in deferring the operation, where the powers of nature will be evidently unable to repair the injury. But, on the other hand, the mortality after primary amputations likewise warns us against being in the first instance, too solicitous to remove a limb, whose injury it is possible nature might repair, under the supposition, that in so doing we place our patient in a state of comparative safety.

We have before seen that different diseases appear at different periods after the performance of an amputation, and that the occurrence of inflammatory complaints is chiefly to be dreaded in persons whose strength has not been reduced by long-continued disease. Experience also teaches us, that during the first three weeks after the infliction of a severe injury, as a compound fracture of the leg, the same disposition to visceral and inflammatory diseases is manifested, and that the amputations which are performed during that period are exceedingly unsuccessful. After, however, the suppurative stage has commenced, amputation may be resorted to, with a chance of success approaching that of the operation when performed for a long standing disease.

[After giving a table showing the difference in mortality between what he calls "intermediary" and secondary amputations, the author goes on to say,]

The difference in mortality is here very striking, and shows most distinctly the greater chance of recovery of a patient after an amputation performed during the suppurative stage. We here find a ready explanation of the discrepancies of various authors, with respect to the amount of death after the delayed operation; for where a surgeon makes it a practice only to amputate in the secondary period, that is, after the twenty-first day, his success is certain to be vastly greater than another, who attempts to save his patients by having recourse to the operation in the intermediary period, when inflammatory complaints are so apt to occur:—the former may be able to boast of only one death in six of those in whom he removes the arm, whilst the latter may be compelled to allow an average mortality of one in 1·83 after the performance of the same operation.

It is likewise remarkable how slight is the difference in the intermediary period between the mortality after amputations of the thigh, and that occurring after those of the arm; whereas in the secondary period the difference is very observable; showing that in the former the danger from any operation is so great, that the amount of a limb removed has but comparatively little effect upon the result. The obvious conclusion from a such a fact is, that we should avoid the performance of any operation upon a compound fracture during the first three weeks after an accident, providing it can be safely deferred until the suppurative stage has commenced. Table X shows us the most frequent causes of death after the primary and secondary operations. It is there seen, that whilst in the former the chance of fatal shock, exhaustion, and secondary hemorrhage is less, the liability to secondary inflammations, as phlebitis and erysipelas, is considerably greater. In visceral inflammations, the danger from both is, however, nearly equal, which most probably arises from the operations performed during the intermediary being classed along with those which took place in the secondary period. Gangrene produces death, as might be expected, more frequently in the primary operations.

Mr. Alcock has given us the following account of the causes of death, of amputations performed in his own practice, classified according to the period at which the operations took place In the primary amputations, the average mortality from shock was one in fifty-seven; in the intermediary period, none died of twenty seven cases; whilst of the cases of amputation performed after the twentieth day, one out every 8·66 sank from exhaustion or shock. Thus, of all the classes of amputation which we have hitherto examined, that consisting of the operations performed after the twentieth day after the receipt of a severe injury, incurs most risk from shock; and herein is the character which most distinguishes the mortality following secondary amputations, from that observed after amputations for long standing diseases.

Again, whilst in Mr. Alcock's practice, in the primary amputations one case in every 9·5 was affected with phlebitis, and one in every 3·56 with visceral inflammations or abscesses, and whilst of the intermediary operations one in nine suffered from the former, and one in 5·4 from the latter diseases, no death occurred amongst twenty-six secondary operations from these causes.

On the other hand, according to the same author, one in every 6·5 amongst the secondary amputations perished from hectic or exhaustion following some time after the operation, whilst none amongst either the primary or intermediary classes sank from these affections.

These facts most strikingly confirm the view formerly given, with respect to the necessity of antiphlogistic treatment after primary amputations, and show us that the more the patient is reduced previous to the operation, the less danger is there of his becoming affected by those serious secondary inflammations which cause so much of the mortality observed after the performance of this operation on healthy individuals.

But a question has been raised with respect to the time after an accident at which it is proper to perform a primary amputation; whether the limb should be removed whilst the patient is in a state of depression, or the operation be delayed until reaction take place. Common sense, as well as the results of experience, decides the matter at once in favour of the latter plan; and I have seen, I believe, many deaths occur after amputations, from the shock of the operation being inflicted whilst the patient was suffering from that of the accident. Table XIV. shows us that the chief mortality within the first four days after amputations for accidents, is in the thigh operation; it is, therefore, necessary to remember, that in all amputations at this part, on account of the operation itself inflicting a greater shock on the system than when performed elsewhere, a larger interval of time should be allowed to elapse between the receipt of the accident and the application of the knife.

[Some interesting facts are next adduced respecting the comparative success of circular and flap amputations;. The statement given by Dr. Fenwick is only approximative; but it shows that at the Newcastle Infirmary, except after amputations performed for ulcers and malignant diseases, the advantage is on the side of the circular. This is contrary to the usual supposition, but it is supported as far as amputations of the leg are concerned, by the statistics of Mr. Alcock and Dr. M'Hardy. These gentlemen, however, find that in amputations of the thigh and arm, the success of each method is about equal; while in the forearm, the flap operation is the most successful.]

It has been before seen, that phlebitis and purulent deposits constituted by far the most fatal class of diseases occurring after amputation; the comparison, therefore, of the liability of a number of persons to these affections, after submitting to the different methods of operation, is highly important. Dr. M'Hardy, out of one hundred and sixty-five flap amputations, gives twelve cases of phlebitis as having occurred, or 1 in 13·75; whilst, of one hundred and ninety-nine circular, only nine were affected with it, or 1 in every 22.11. Again, Mr. Alcock states, that out of eighty-seven circular operations, ten died of phlebitis, or purulent deposits, or 1 in every 8·7; whilst, of twenty-four flap operations, six perished, or 1 in every four, from the same class of diseases. Taking, then, the general amount of death as caused by these diseases, the advantage is vastly in favour of the circular operation; or, if we confine our attention only to the primary amputations, Mr. Alcock informs us, that of this class, after the circular operation, 1 in 6·5 died of phlebitis, or purulent deposits; whilst, after the amputations, 1 in 3 died of phlebitis, or purulent deposits. If we investigate the frequency of their occurrence, with respect to the site at which the amputation is performed, we find a somewhat different statement. According to Dr. M'Hardy, 1 in 24 was attacked by phlebitis when the arm was removed by the flap, and none out of twenty-seven cases of the fore-arm amputation when the flap method was employed; whilst, after the circular operation, 1 case of phlebitis took place in every 10 when it was performed in the former situation, and 1 in every 26 when in the latter. The comparative liability of the two classes of operation to phlebitis, is reversed in the lower extremity. In the thigh operations, according to the same writer, the employment of the flap was followed by phlebitis once in every

12·75 cases, and, in the leg, once in every four operations; whilst, after the circular, 1 in every 33·33 was attacked by the same disease when the amputation took place in the former site, and 1 in every 21·5 when it was performed in the latter.

These are very important statements, as displaying the greater chance of the occurrence of this formidable disease in the most dangerous amputations, when they are performed by the flap operation. The liability to secondary hemorrhage is about equal after both plans of operation. Thus, according to the author last quoted, in the flap amputations 1 in 12·68 was affected by it; whilst in the circular one, 1 in 13·26 suffered from the same accident; and in Mr. Alcock's practice, after the former method 1 in every 6, and, after the latter, 1 in every 5·4 was affected by secondary hemorrhage. As, however, this accident seldom proves fatal, excepting after the thigh operations, we should chiefly direct our attention to the chance of its occurrence after removal of this part. Dr. M'Hardy gives nine cases of it as having occurred out of a hundred circular, and nine out of one hundred and two flap amputations of the thigh. We need not, therefore, consider the liability to secondary hemorrhage as affording any argument against the employment of either the one or the other method of operating.

But if the circular operation is less exposed to the occurrence of phlebitis, there can be no doubt that the advocates of the flap can bring forwards greater rapidity of execution, better stumps, a less liability to necrosis, and a shorter time of cure, for their favourite operation. With respect to the last of these advantages, Dr. M'Hardy found that 1 stump in every 4·73 heals by granulation after the employment of the circular; whilst, after the flap operation, only 1 in every 7·85 did not unite by the first intention.

The question, then, which it is necessary to settle, before determining which description of operation we will perform upon any particular case, appears to be, whether the advantages of a better stump, and a quicker recovery, are sufficient to outweigh an increased liability to phlebitis. In amputations for diseased joints, in which phlebitis and secondary inflammations are of comparatively rare occurrence, and in which necrosis and conical stumps are, according to my own observation, most likely to take place, the flap operation appears, in most cases, to be indicated, more especially if the part to be removed be the upper extremity, or the patient be young. On the contrary, in traumatic amputations of the lower extremity, the circular operation would seem most advisable, as, in such cases, plenty of covering can be always obtained for the ends of the bones, whilst, at the same time, we subject the patient to a less danger of phlebitis and secondary inflammations than by the other method. It seems somewhat strange, that, notwithstanding the long disputes upon the merits of these different plans of amputations, so few facts should have been collected; and I fear we shall have to wait for more detailed and accurate investigations, before we can venture fairly to decide upon their respective merits.

[Dr. Fenwick finds that the sex of a patient, *per se*, has little or no effect upon the issue of amputation; but that the influence of age on the contrary, is very great. He says:—]

It is pretty evident, and the opinion is supported by the study of other operations performed for diseases, that whilst amputations for disease are most successful when performed on persons between 5 and 20 years of age, the chance of recovery of those under 5 years of age is comparatively small. It should be also remarked, that the increase of mortality in this class of amputations is not gradual; but that, after a certain period, what had been at a previous age an operation of but small hazard, gradually assumes a most severe character. The turning point is in these British hospitals at 20 years of age; but in the Newcastle Infirmary the mortality does not become excessive until after 30, when the amount of death which had been up to that age, so dissimilar in the Glasgow and Newcastle Infirmaries, becomes afterwards more closely approximated. After the age of 30, the mortality seems as a general rule gradually to increase in all the hospitals, until the commencement of old age, when the danger usually becomes less; a smaller amount of death having occurred, both in the French hospitals and at the Newcastle Infirmary, after 70 years of age, than had been observed in the period immediately preceding that advanced time of life.

In cases of amputations for diseased joints in the lower extremity, the increased mortality, after 30 years of age, is exceedingly striking; for of thirty-two cases of amputation performed on persons above that age, nine perished, or 1 in every 3.55, whilst of sixty-six of those under that time of life, only three died, or 1 in 22. After 50 years of age the mortality becomes less than in the twenty years before that time; so that in persons between 30 and 50 years of age, the amputations for diseased joints in the lower extremity have been least successful. How carefully, then, should we in these operations consider the time of life at which our patient has arrived before pronouncing a favourable prognosis. The mortality in the second week after the operation shows us, that it is in the occurrence of a less amount of secondary inflammations that the superior success of early and extreme age consists.

If we compare the average mortality during the second week after amputations for diseased joints, in persons between 30 and 50 years of age, with that occurring in the same period of life in traumatic amputations, we shall discover but little advantage to arise from the circumstance of the disease having previously existed; the mortality after the first week being, in the former class of amputations, 1 in 3.55, whilst in the latter it is 1 in 2.83. That the time required for cure also increases with the age is worthy of remark; each period between 10 and 50 years of age being marked by a very gradual increase, whilst below and above these periods the difference is very considerable.

Amongst amputations of the lower extremity performed for other diseases, a different law of mortality may be observed; and this we might be led to expect, on account of the subjects of the operations of which it is composed, not having been so much reduced by disease as those cases from which the other side of the table has been formed. Amongst the other pathological amputations, the usual comparatively small amount of death from secondary disease in persons below 20 years of age is observable; but in the succeeding period, in which, amongst amputations of diseased joints, we remarked the mortality to be still comparatively small, we here find it to have risen to an equality with that of the most fatal age. It is curious that, amongst these amputations, the time of cure is as great below 20 years of age as at any future time, therein differing from the results obtained by the analysis of cases of amputation performed for diseased joints.

In Table XXXV. I have classed together all the pathological amputations of the upper extremity, the numbers of the operations performed for each disease being too small to admit of their separation. No regular increase in mortality corresponding with the age can be remarked. The fact, that only 1 out of 8 of these cases of amputation who were above 50 years of age died, whilst 1 out of 4.5 perished who were between 20 and 50, is valuable with reference to the operation of resection of the elbow joint. It teaches us to perform the latter operation during the earlier periods of existence, as there is both a greater chance of its being successful, and a less probability of recovery if amputation be resorted to: on the other hand, after 50 years of age, the hazard from the amputation decreases, whilst the danger from the removal of the joint becomes greater. It is worthy of observation, how slow the wound is in healing, below 20 years of age, amongst pathological amputations of the upper extremity; and, however inexplicable the fact may be, it will be seen, by examining Tables XXXIV. and XXXVI., that at this early period of life, although the mortality is usually small, yet the time required for cure is generally higher than at any other period.

As former Tables have shown how great is the difference in the mortality between 20 and 30 years of age, according as we investigate it in the class of amputations for diseased joints, and in those amputations which are performed for accidents; so, in Table XXXVIII., we find that all the deaths at that period of life had occurred amongst those who for the shortest time had suffered from disease. It will be advisable, therefore, in persons between 20 and 30 years of age labouring under incurable diseases of the joints, to delay the performance of amputation as long as the strength and other circumstances of the patient will permit, instead of resorting at an early period to the operation, on account of there being but little prospect of a natural recovery. In that time of life which, in amputations for diseased joints of the lower extremity, is most fatal—viz. from 30 to 50 years of age—we find also, that an amputation succeeds better if the disease has existed from one to five years, than if the operation be performed at an earlier stage of the disease.

In analysing the causes of death in secondary amputations, it was found that, whilst the patients undergoing that operation were not so liable to inflammatory affections as those suffering amputation immediately after receipt of an accident; yet, that they were more likely to sink from exhaustion than cases of pathological amputation, and that this, in fact, constituted the chief danger of the amputation when performed at a considerable distance of time from the accident. From this we might be led to conclude, that the period of life in which the reduction of the strength of the patient by disease has the greatest effect in preventing subsequent inflammation, and, at the same time, that period in which the greatest power of resisting shock existed, we should find the most favourable for the secondary amputations; and this supposition Dr. Lawrie's statistics confirm. Between 20 and 30 years of age, no deaths occurred out of seven secondary amputations; whilst before that period, in which we found, by a previous table, shock had so deadly an influence, seven died out of thirteen, or 1 in every 1·85. Between 30 and 50 years of age, during which death most generally occurs from secondary inflammation, whether the operation be performed for traumatic or pathological causes, twelve died out of sixteen cases of secondary amputation, or 1 in 1·33; whilst, beyond 50 years of age, of eight cases, six also died, or 1 in 1·33. From 20 to 30 years is the age, then, at which we gain most by deferring, for the longest time, an amputation for an accident, both because the reparative process is most active at that period, and therefore there is a greater chance of a natural recovery, and also because there is less danger than at other times of life of the patient sinking from exhaustion immediately after the operation; whilst, by the continuance of suppuration, the chance of the secondary inflammations to which that age is liable after amputations, is removed. In patients below 20 years of age, we should remove the limb at an earlier period if there seems but small probability of a natural recovery from the accident; because there is less power in persons of that time of life of surviving the shock of the amputation, if it be long deferred, and we gain less in other respects by delay, on account of the small chance of the occurrence of phlebitis, or other secondary inflammations, after the amputation, when performed on persons of that early age. But the question arises, at what age are persons suffering compound fractures of the limbs least likely to reach that period when amputation can be safely employed? From an analysis of a number of such accidents to the lower extremities, recorded in the operation books of the Newcastle Infirmary, I find, that of persons below 20 years of age, three died out of twenty-four, or 1 in 8, within the fourth and twenty-first day after the infliction of the injury. In none of these, therefore, could any chance of a favourable result, after amputation, have existed, otherwise that operation would have been attempted. Of twenty-two cases of compound fracture between 20 and 40 years of age, four died, or 1 in 5·5; whilst of twenty cases who were between 40 and 60 years of age, two perished, or 1 in 10; and of four persons above that time of life, none died. It should be, therefore, borne in mind, in attempting to save a dangerous case of compound fracture of the leg without amputation, when the person is between 20 and 30 years of age, that there is less chance of a patient reaching the period of suppuration, when secondary amputation, if required, is most successful; although, if that operation can be performed, there is greater probability of recovery than if it were performed upon a person below 20 years of age.

In persons between 30 and 40 years of age, I should imagine the attempt to save a compound fracture of the lower extremity was exceedingly hazardous, both on account of their liability to the secondary inflammations which are apt to follow the accident, and also, because, if the secondary operation be permitted, the chance of recovery after the amputation is so small. As the amount of fatal disease between the fourth and twenty-first days after compound fractures has been so much smaller in persons between 40 and 60 years of age than in those of the period immediately preceding that time of life, we must either suppose that the surgeons of the Newcastle Infirmary had amputated a large number of the worst cases who were at this time of life, which they would have attempted to have saved if their ages had been less; or, otherwise, that persons of that age suffering severe accidents, are really less liable to fatal diseases between the fourth and twenty-first day after a compound fracture, than those between 20 and 40 years of age. But, from whichever of these causes this small amount of mortality has arisen, it is evident that accidents of greater severity, occurring in persons between 40 and 60 years of age, may be more safely deferred to the suppurative stage than is usually imagined. And, although the mortality in the case of secondary amputations above 50 years of age, is 1 in 1·33, yet we have found, by Tables XXXVI. and XXXVII., that an equally excessive amount of death takes place amongst those at that time of life who undergo the primary operation, when performed on the lower extremity; whilst in the class of diseased joints, to which secondary amputations are most similar, the number of deaths is remarkably small at that age. In order, however, to settle points of this importance, we should have large numbers of carefully observed and minutely classified cases, both of amputations and of compound fractures; for, I believe, there are few investigations more likely to prove useful than those which can be made regarding the age at which we may most safely treat a compound fracture without amputation.

Monthly Journal, Dec, 1847, *p.* 404; *Jan.*, 1848, *p.* 482

77.—*On the Necessity of Preparatory Treatment, before Operation.* —By Bransby Cooper, Esq.—[Mr. Cooper strongly insists upon the necessity of well ascertaining the state of a patient's health, as to the absence of organic disease, the condition of the bowels, state of the urine, &c., before undertaking an operation. We are often tempted to perform slight operations at the moment, but it is dangerous to do so, especially as to operations on the head and face,—

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* The reader will perceive that we have in our abstract of these valuable papers, given the reference to the different Tables, but not the Tables themselves. For the last piece of information the reader will be well rewarded by referring to the Journal itself.

encysted tumours of the scalp for instance. On this subject, Mr. Cooper says:]

Several years ago I removed an encysted tumour from the head of a patient. Upon making a mere incision through the skin it immediately turned out, the operation of extracting it not occupying more than a minute. On the third day I considered my patient convalescent; on the fourth I was suddenly sent for to see him, and found that a most startling change had taken place in his condition. I should not have recognized him; his head was swollen to twice its natural size; not a feature could be discerned; and his complaints were urged in muttering delirium. I immediately ordered him (as his bowels were costive), a large dose of calomel, fomented his head and face, punctured the scalp, and prescribed diaphoretic effervescing draughts. The day following he had but slightly improved, although his bowels had been freely opened, and I immediately proposed a consultation. The gentleman who met me recommended bleeding—a remedy to which he especially trusted in all cases of febrile action. But as the patient had a very dry tongue, attended with delirium, and was complaining of great thirst, muttering in almost inarticulate sounds his desire for porter, I proposed that we should try its effect: this was consented to; and I held a pint of porter to his lips, he drank it off at a draught—soon fell into a sound sleep: when he awoke he was perfectly free from delirium, and from that moment his recovery rapidly progressed. In relating this case, I do not mean to inculcate the propriety of the invariable use of stimulus, but I do believe that in most cases it will be found a safer remedy than bleeding, more particularly in London or any crowded city; nor have I formed this judgment from the solitary case just mentioned, but it is an opinion founded upon my own experience and the practice of my colleagues in this hospital as well as in private.

A lady applied to an eminent surgeon, to ascertain from him whether a small encysted tumour could be removed with perfect safety from her head; to which he replied, "certainly:" the operation was immediately performed, but seven days afterwards she was dead from an attack of erysipelas. The next case, as the patient was not attacked by erysipelas after the operation, may be considered out of place with regard to our present considerations; I have mentioned it, however, merely to exemplify the necessity of ascertaining the real constitutional condition before you venture to submit a patient to any mechanical lesion.

A short time ago, an individual came under my care with an external pile and a fissure in the mucous membrane of the rectum; he was considerably out of health, and attributed all his ailments to the sufferings he experienced in the passing of his motions, owing to the local disease; he urged me to relieve him by operation. I kept him, however, a week or ten days under my care before I operated, and by soothing remedies had somewhat improved his condition, when I removed the external pile, and drew the bistoury across the fissure, the whole time of the operation not exceeding half a minute. The patient felt immediate relief after the operation, he had little or no pain in passing his motions, but in the course of four or five days he was seized with symptoms of subacute peritonitis: calomel and opium, and leeches, were ordered, but four days afterwards he died.

Upon examination of the body, he was found to be the subject of granular kidneys, (the morbus Brightii,) which no doubt had caused his death.

It had been ascertained, during life, by my dresser, that his urine was albuminous; but I considered the severity of his suffering demanded the performance of this slight operation; although the sequel renders it a matter for consideration whether I was right, under these circumstances, in subjecting him to a fresh source of irritation.

From such cases as these you must be impressed with the necessity of doing everything which the science of surgery can insure, so far as lies in your power, to place your patient in the greatest state of security before you subject him to any surgical operation, and even then never promise that any operation, however simple, will be perfectly free from danger, for depend upon it, it is as unwise to treat slightingly the most trifling incisions of the skin, as it is dishonest to attach to an operation more importance than it justly deserves.

Some surgeons suppose that it is better to perform what are usually considered simple operations at the moment, than to allow the dread of anticipation to remain on the mind of the patient, and then proceed to act upon this opinion without any preliminary precaution. There are, however, I believe, but few patients who will not duly appreciate the cautious recommendation of a surgeon to submit to some little preparatory discipline, and he will gain much more confidence from the patient by this display of his judgment, than from the hasty recklessness which evinces boldness and self-reliance, rather than judicious precaution.

Medical Gazette, Nov. 12, 1847, *p.* 825.

ORGANS OF CIRCULATION.

78.—ON TUMOURS OF THE NECK CONNECTED WITH BLOODVESSELS.

[Some years ago Mr. Liston punctured a tumour in the neck, from which considerable hæmorrhage occurred, and which the operator then supposed to be an abscess in communication with an artery. Professor Syme has published the account of a similar case in which he tied the artery, but after death the tumour was found not to communicate. Mr. Syme says:]

About a month ago a young man called upon me to get my opinion of a swelling in his neck. It was seated on the right side, and occupied the upper triangular space. It was of an oval form, quite circumscribed, and obviously consisted of a bag containing fluid. Upon more particular examination, I found a distinct pulsation of the kind which I had been accustomed to regard as characteristic of aneurism, being an expansive impulse, not limited to a portion of the tumour, but felt equally at every accessible point, even from the mouth, and more especially in a lateral direction. The patient stated that the swelling had commenced about nine months ago—and had progressively enlarged without any cause that had been ascertained. He also stated, that when he worked hard, or walked fast, the tumour increased in size, and had a strong beating in it. I felt satisfied that there was an aneurism of the carotid artery, but expressed no opinion at the time, and desired the patient to call again for further examination. When he did so, I varied the process by placing him in different positions—by trying the effect of pressure on the tumour and artery—and by listening to the sounds of the tumour. There was no distinct aneurismal "bruit," but a very strong loud pulsation, that implied the action of the heart upon an extensive surface. Finding my impression thus confirmed, I informed the patient of my apprehension: but before giving a decided opinion, requested that he would call once more. He did so a few days afterwards, and I then felt fully warranted in informing him that an operation would be requisite for his relief. Next day he placed himself in my hands for this purpose. After he had been confined to bed for a few days, I tied the artery below the crossing of the omo-hyoideus, as the tumour prevented this from being done higher up. The textures of the neck were more than usually adherent, and the vessel was not exposed to view with nearly the same facility as upon the former occasions which have required me to perform the operation. I nevertheless succeeded without any tearing, or undue disturbance of the parts, in passing and tying the ligature, so as to relieve me from the slightest apprehension of any bad consequences. The tumour immediately sustained a very distinct diminution of bulk, which was remarked not only by the gentlemen present, but by the patient. He went on most favourably after the operation until the fifth day, when hæmorrhage took place from the wound, and notwithstanding every effort to effect prevention, recurred from time to time until the evening of the twelfth day, when it proved fatal.

The parts concerned were examined next day in the presence of Drs. Scott, Duncan, Mackenzie, Peddie, Brown, Gillespie, and Ballingall.

We found a tumour, extending from the ear to the extremity of the omo-hyoideus, and completely occupying the upper triangular space of the neck. At the lower part it seemed to terminate in the sheath of the vessels, which looked like a prolongation of it downwards, but was found to be merely enveloped by the bag, which I dissected out entire from the coats of the vessels to which it had intimately adhered. The cyst, when opened, was found to possess a tough consistence, and to contain a fluid like thin gruel. At the posterior part, when viewed internally, it displayed a sacculated or honeycomb looking structure.—*Edinburgh Monthly Journal.*

[Another case has been reported in which a large abscess in the neck (treated by a quack) had not been opened, but allowed to go on till it burst by several openings. When the discharge had gone on for about a month, alarming and repeated hæmorrhages took place from the openings. After death,]

The bloodvessels were injected, and it was found that ulceration had occurred in the subclavian artery, as it lies upon the first rib. The rib was in a carious state, as well as the bodies of the contiguous vertebræ. The situation of the ulcerated opening in the artery was towards the bone, and occupied about one fourth of the calibre of the vessel; the opening was of oval shape, and well defined. There was no enlargement of the capacity of the vessel at the point.

Lancet, Feb. 5, 1848, *p.* 157.

79.—EXTIRPATION OF NÆVI BY LIGATURE.

By J. Luke, Esq., Surgeon to the London Hospital.

[Mr. Luke proposes a method of destroying nævus, aneurism by anastomosis, or as he terms it "capillary aneurism," which presents some advantages over the ordinary operations by ligature, one of which is that it can be better applied to large masses. Of this method, he gives the following]

Description.—To prepare for its application, several needles (straight or curved, as most suitable to the case), are to be threaded upon a very long and strong ligature of dentists' or other silk, and placed upon it so as to be about 12 or 14 inches apart from each other. To avoid the inconvenience of a deficiency, the number threaded should be more than are likely to be required in the operation; and must vary, from two or three to any number, at the option of the surgeon. The ligature with the needles on it may be wound round a card, and unwound as it is wanted in the progress of the proceedings.

When thus prepared, the operator introduces the needle nearest to the extremity of the ligature, at a point just beyond the limits of the part to be removed, and having passed it through the integuments to the opposite side, draws the ligature out sufficiently to leave an end for tying when the needle is cut off.

The second needle is then introduced in like manner, about half an inch from where the first was introduced, and brought out at a similar distance from where the first was brought out, and the ligature drawn through also to a sufficient extent to leave an end for tying. The third needle is introduced and brought out in a similar manner, and at a distance equal to that between the second and first. A fourth and fifth, or any other number, may be introduced, and brought out in a similar manner, and at a similar distance, until the limits, or rather a little beyond the limits of the disease most distant from that at which the first needle was introduced, have been reached.

When all the needles that may be required have been introduced, they will be found to be arranged in a manner deemed suitable to the case by the surgeon. Those which have been threaded but not used, may be cut off.

In introducing the needles which are intermediate between the first and last, care should be taken that they are passed beneath the base of the disease to be removed; for unless this be done, perfect insulation of it will not be effected. To do this more certainly, and with greater ease, the diseased mass should be pinched up between the fingers of the surgeon or his assistant: a proceeding which in capillary aneurism has the effect of emptying the blood-vessels, and of diminishing the space which the needles have to traverse.

Having concluded the introduction of the needles, they are to be removed by cutting the ligature near to the eye, by which proceeding a series of loops of ligature are formed, each embracing but a small portion of the mass to be removed. The extremities of these loops are to be tied, respectively with each other, with as much tightness as will be sufficient to stop effectually the circulation of blood through the part included within the knot, an operation which is rendered comparatively easy by reason of the limited quantity of structure included within it.

In tying the knots it will be convenient to begin and proceed in the order in which the needles were introduced, until the whole are completed, for thus the probability of entanglement is diminished. As the knots are tied, small portions of the disease are successively cut off from the general circulation, and the whole becomes perfectly insulated, as the knot of the last loop of ligature is drawn tight.

Painful as the application of the ligature in such cases usually is, (and from which painful condition the above described mode affords no exemption,) I believe the duration of suffering is shortened by the plan which I propose, in consequence of the more rapidly destructive effect which it produces on the vitality of the part by the perfect stoppage of the circulation which it causes.

Medical Gazette, April 7, 1848, *p.* 581.

80.—DEATH FROM AIR ENTERING A VEIN IN THE NECK.

[The deceased, a man of the name of William Richards, 39 years of age, applied to Dr. Willis, of Barnes, Surrey, labouring under chronic laryngitis. After treating the case by leeching and blisterng for about a fortnight, the introduction of a seton was proposed. Dr. Willis in his evidence before the coroner, gives the following account of the operation, and the accident by which it was accompanied. He says,]

I pinched up the skin with the finger and thumb of the left hand, and immediately thereafter thrust in the seton-needle armed with a strip of lint. The seton-needle used was about the size of a common bleeding lancet. It entered horizontally, about two inches and a half above the breast-bone, and not at all near the jugular vein, or any other important blood-vessel. At the instant of its entrance I heard a slight momentary hissing sound. At first I thought that I had opened a subcutaneous abscess communicating with the windpipe; but almost at the same moment I looked in the poor man's face, and saw that another and far more serious event had occurred—that the rushing of the air was not out from the windpipe, but into some small vein which had been implicated in the operation. The man was deadly pale ; his features were set; he fainted, and subsequently became rigid and convulsed. I kept my fingers on the openings, to arrest the farther entrance of air during inspiration. I caught the man and laid him down on the floor.

[In half an hour Dr. Cormack of Putney arrived, and it was then determined to bleed the man, who was then rigid, insensible, and almost pulseless. After the bleeding, the pulse became good, and the patient was able to swallow a little wine and water. Warm applications to the feet also were used; and the whole of the treatment had the concurrence of Mr. Syme, who was summoned to see the case. Death took pace, however, in rather more than seven hours after the accident. On a post-mortem examination,]

It was found that the jugular veins and the large vessels of the neck were uninjured; that the right auricle and pulmonary artery were distended with frothy blood; and that the lungs were emphysematous.

Medical Gazette, April 7, 1848, *p.* 608.

81.—CURE OF ANEURISM BY COMPRESSION.

By Dr. Bellingham.

[Dr. Bellingham recently related to the Surgical Society of Ireland two fresh cases of Aneurism treated by compression. The first was a soldier under the care of staff-surgeon Humfrey, with a femoral aneurism: Read's aneurism-compress was applied, and at the end of thirty-three hours, pulsation had ceased, and never returned. The second was a case of popliteal aneurism, under the care of J. Tufnell, Esq.; it was cured in six days. Within the last five years there have thus been thirty cases of aneurism, five of which were femoral and twenty-five popliteal, treated by compression. After relating the cases, DR. BELLINGHAM remarked,]

It has been repeatedly and frequently urged against the treatment of aneurism by compression, that it is not only a much more tedious procedure than the ligature, but that it is also much more painful. There can be no doubt that if this method is undertaken by a surgeon who is ignorant of the manner in which compression effects the cure of aneurism,—who does not understand how to regulate the compressing force,—who is not aware of the degree of pressure necessary, or where to apply it most advantageously,—and who is not provided with the proper instruments for making compression,—the treatment will prove both tedious and painful, and we cannot wonder that it should fail in such hands; and the few cases which have been put forward with the object of deterring surgeons from using compression, present a sad contrast in this respect to the two just detailed. In Mr. Humfrey's case, for instance, compression for thirty-three hours was sufficient to cure the disease; in five days the patient was walking about, and in five more he left the hospital, the use of the limb being perfect; a period at which, if the operation had been performed, and everything had gone on satisfactorily, the patient would still have been exposed to the risk of ulceration of the artery and secondary hemorrhage. In Mr. Tufnell's case, in which the disease was of longer standing, the sac of a larger size, the patient of intemperate habits, having recently had the venereal disease, and the treatment conducted under all the disadvantages of a crowded lodging, where the regulation of the compressing instruments must have been left in a great measure to the patient himself, the treatment, notwithstanding, lasted only for six days, and the patient in that comparatively short period was perfectly cured of a painful and dangerous disease. I cannot help, therefore, saying, that any surgeon, with such powerful evidence in favour of compression as these two cases afford, coupled with the previous evidence in its favour, who would expose his patient to the pain and risk of the operation in popliteal aneurism, or in femoral aneurism low down, would, to use a mild expression, be exceedingly culpable.

There are one or two points connected with the foregoing cases worthy of further remark. The first is the relief from pain which the second patient experienced when the compressing instrument was applied, and the return of pain when the pressure was removed; evidently owing to the stretching and compression of the parts about the aneurism being taken off when the blood was prevented from entering the sac in a full stream; and showing that when an aneurism is large and produces much pain, compression really relieves this pain, and its application affords so much ease to the patient that he willingly maintains continuous pressure.

The second is the occurrence of severe pain, and of an unusual character, in the parts about the aneurism at the period that the pulsation ceased. This fact has been frequently mentioned in the details of the cases of aneurism treated by compression hitherto recorded, it was very well marked in both the cases just read, particularly in the second.

I am of opinion that this pain is caused by the *sudden* enlargement of the collateral vessels, which ensues when the artery is obliterated at the point from which the aneurism springs, by which the neighbouring parts are necessarily also compressed, particularly the nervous twigs which accompany these arterial branches; because this pain does not set in until immediately before the pulsation finally ceases in the aneurism; because at this period we first detect pulsation in the articular arteries or other anastomosing branches; and because this pain subsides of itself after a time, as the new circulation becomes fully established. That the collateral vessels about the knee do not enlarge in popliteal aneurism until the aneurismal sac is filled up, and the artery at the part is about to be obliterated is proved by their pulsation being detected first at this period; yet if we consult works upon surgery, we should be led to suppose that nothing was more easy than to bring about the enlargement of the collateral vessels; indeed, compression was formerly recommended by writers on aneurism with this object, as a preliminary step to the operation, by which they supposed the chances of success of the operation would be increased. But as the writers of the period to which I allude had not clear ideas respecting the mode in which the ligature effects the cure of aneurism, and were entirely ignorant of the manner in which compression brings about this result, we may be excused for not admitting their conclusions respecting the enlargement of the collateral vessels.

As there seems, however, to be still some misunderstanding or some difference of opinion with respect to the exact mode in which compression effects the cure of aneurism, I shall avail myself of the present opportunity to make a few observations upon this point.

It is obvious, first, that whatever mode of treatment may be adopted, unless the sac of an aneurism becomes completely impervious to the entrance of blood, the disease will not be cured.

It is also obvious, secondly, that an aneurismal sac to be impervious to the entrance of blood must become solid: that is, must be filled up with solid matter.

Thirdly, an external aneurism to be perfectly and permanently cured, must not only become solid, but the artery at the point from which it springs must be obliterated.

These objects are fulfilled, as well when a cure is effected by compression upon the artery between the aneurism and the heart, as when the ligature is successfully used, or when the cure has been brought about by nature's unaided efforts.

Dublin Medical Press, Dec. 1, 1847, *p.* 337.

82—DESCRIPTION OF A NEW TOURNIQUET.

By H. V. MALAN, Esq.

The following is the description of the instrument:—A smooth piece of brass forms the main part of the tourniquet; it is 2 inches 7-8ths long, 1 inch 2-8ths wide, and is flat one way, but has a slight curve in its length of 2-8ths of an inch, in order to make it fit closer on the limb; it is 2-8ths of an inch thick on the sides, being hollowed out in the centre for the easy action of the band. At each end are two cylindrical rollers, each 2 8ths of an inch thick; the outside one is about 1-8th of an inch apart from the inside one, which stands about 1-16th of an inch from the smooth edge of the main piece itself. The ends on which the rollers are fixed are 5-8ths of an inch long, so that the inside of the piece of brass measures 1 inch and 7-8ths.

Two small pieces of brass, of the same thickness and width as the main piece, serve as female screws; they are quite independent of the other parts, and only kept together by the spindle of the male screws, and with the other parts of the instrument by the band. Each of those pieces of brass is 1 inch 2-8ths long, and 6-8ths of an inch wide, and 3-8ths thick. The lower part of it, that which rests on the main piece, carries a cylindrical roller similar to the others, and the upper part is the nut of the horizontal screw.

There are two screws on the same steel spindle, and each screw is double. The spindle on which they are is 3 inches and 3-8ths of an inch long; the screws 3-8ths of an inch in diameter. On one half of the spindle the double screw runs from right to left; on the other half, from left to right, so that both screws meet in the centre. By this arrangement the two female screws are drawn with double force and double rapidity towards each other by the turning of the spindle: five turns only being requisite to make them move from both extremities, and meet in the centre of the instrument. A small peg driven across the square end of the spindle prevents their escaping off the screws.

Each end of the spindle is cut square, so as to fit exactly in a key which is removed, when the tourniquet is fixed. The tenon or square end of the spindle is 3-16ths of an inch wide, and about 2-8ths of an inch long, so that the screws and spindle measure from one end to the other 2 inches 6-8ths of an inch. The cylindrical end of the key which fits on the spindle is 4-8ths of an inch long; the thumb piece 1-8th thick, 4-8ths wide, and 1 inch 3-8ths long.

The band, pad, and buckle, are made and used the same way as in all other tourniquets. Thus the band passes under the outside cylindrical roller of the main piece of the instrument, round the one of the female screw, under the inside one of the main brass piece, under the main piece itself, and at the other end in the same manner. A wooden pad is made to slide on the band, at the extremity of which a buckle is fixed.

As the key can be adapted to either end of the instrument, it can be placed on either side of the limb, below or above as required. The instrument, as a single glance will prove, is simple and strong: it can be put on, fixed, and tightened, with little trouble or effort on the part of the operator; and owing to its two double screws, with much power and rapidity. The compression is especially made on the blood-vessel, by means of the pad; and its very construction makes it lie low and close to the limb, so that not only it cannot be upset by the sudden collapse of the muscles after the amputation, but can be used in any position, or applied to any part of the body; and is not in the way of any garment slipped over it. It is compact, small, and safe. As the key may be removed when the instrument is once fixed, no patient can in any case free himself from its grasp.

Medical Gazette, March 31, 1848, *p.* 563.

ORGANS OF RESPIRATION.

83.—ON ŒDEMA OF THE GLOTTIS FROM SWALLOWING BOILING WATER, &c.

By Dr. Jameson, Surgeon to Mercer's Hospital, &c.

[In the following observations Dr. Jameson principally directs our attention to the indications for tracheotomy when boiling water has been swallowed, or attempted to have been swallowed, and to the circumstances to be attended to in the performance of this operation. He says,]

In all cases where boiling water has been taken, or attempted to have been taken, into the mouth, the danger at all times is imminent; for although the little patients seem to suffer comparatively very little for the first few hours, still symptoms of grave importance set in, sooner or later, which, if not combated by appropriate treatment, will either kill the patient or call for the operation of tracheotomy. The operation is, therefore, I think, imperatively called for, when the usual remedies, such as emetics, leeches, and the application of heat to the surface, &c., fail in allaying the urgent symptoms. But when the breathing becomes stridulous and croupy, or amounting to a mere pant, from spasm of the glottis, the pulse quick and small, the temperature of the body diminished, the head drawn back, face congested, eyes half open, inclination to coma, and difficult deglutition, I should, on the first accession of those symptoms, at once be inclined to operate; but when these have lasted a sufficient length of time to cause complete coma, or if bronchitis or larnygitis has set in, then, I think, it will be found useless; for when patients under such circumstances die after operation, provided it is not produced by the shock inflicted on the nervous system, it is from the accession of bronchitis, laryngitis, or pneumonia; consequently, if any of these exist before we operate, we can entertain but small hopes of recovery.

In reply to the second proposition,—whether they ever get well without the operation being performed?—I need not dwell upon it, as we all know they do, in proof of which I have adduced one case out of many that have come under my observation. But the fact is so well known to all practitioners, I shall dismiss the further consideration of it, and proceed to our last proposition, viz., the instruments required, the circumstances to be attended to in its performance, and the subsequent treatment to be adopted. The instruments necessary to be provided with, in addition to the ordinary scalpel, scissors, forceps, and retractor, are, a trachea pipe, a gum-elastic catheter, and a small double hook; the latter I think a much more convenient instrument for laying hold of the trachea than a single one, or any other contrivance. The circumstances to be attended to in its performance are:

1st. The operator should bear in mind that his cutaneous incision be in the median line, otherwise the opening into the trachea will not correspond to it, a valvular opening being the result.

2nd. Great caution is required in avoiding the thyroid veins, which, as well as the middle thyroid artery, constantly encroach on the median line.

3rd. Great caution is required that the incision be not carried too low in the neck, thereby opening the fascia that is attached to the sternum, which helps to close the upper opening of the thorax, like a lesser diaphragm, whereby there is not only danger of wounding the vena innominata, but also great annoyance may be experienced in the subsequent steps of the operation, by the elevation and depression of the thymus gland.

4th. We should never open the trachea till we are certain that we have laid open the deep fascia that covers it, or we will surely have a valvular opening.

5th. The operator should be prepared, in case of the supervention of spasm, when the trachea is seized by the hook, to cut the piece out rapidly; or should the patient not breathe instantly after this has been done, the surgeon must lose no time in passing a gum-elastic catheter into the trachea and inflating the lungs.

6th. We should never enlarge the wound in the soft parts after the trachea has been opened, lest a flow of blood should pass into it, and cause the instant death of the patient.

7th. Blood may pass into the trachea the instant the opening is made into it, thereby producing violent cough, or even to such an amount as to asphyxiate the patient. In either case the elastic catheter must be had recourse to, and life may be saved.

8th. Should a lymphatic gland present itself along the course of the incision, and tend to obstruct the passage of air into the trachea, it may be removed without danger.

The subsequent treatment to be adopted is simple. Immediately after the operation, as the patient is generally in a more or less collapsed state, we should give small doses of warm wine and water, or camphor mixture; we ought also to place him in a warm bed with hot jars around him, and have a warm temperature kept up in the room.

When reaction sets in, small and repeated doses of calomel, in combination with James's powder, ipecacuanha, or tartar emetic should be given. If diarrhœa occurs, hydragyrum cum cretâ with Dover's powder should be administered; or, if this will not check it, we may try small anodyne injections. But the principal danger to be dreaded, and which is chiefly to be guarded against and combated, is that arising from bronchitis, laryngitis, or pneumonia; and I know nothing more likely to keep off their approach than inhaling a warm atmosphere, in conjunction with the use of calomel. If, however, any of these symptoms set in, they must be met by the ordinary measures used in such cases.

Dublin Quarterly Journal, Feb. 1848, *p.* 79.

84.—*A Case of Sheep's Tooth in the Bronchus.*—By J. Rayner, Esq., Stockport.—[A girl, seven years old, was admitted into the Stockport Infirmary, having swallowed a sheep's tooth nine days before. It was found, on examining the chest, that respiration in the right lung was completely prevented.]

A consultation was therefore called, and the operation of tracheotomy determined on. In a few moments after its completion, a violent fit of coughing set in, which forcibly expelled the tooth through the wound. Chloroform was employed before the operation, and whilst under its influence, the trachea and adjacent parts were completely still. It was only during coughing that the veins became in the least degree turgid, (except for a few moments before opening the trachea, and whilst securing a small blood-vessel,) when under the influence of this beneficial agent. Immediately after the expulsion of the tooth, the cough ceased, and the patient slept soundly, and on awaking, she remembered nothing of the operation. All her symptoms are quickly disappearing, and no doubt she will soon be in a condition to be discharged from the infirmary.

Lancet, Feb. 26, 1848, *p* 231.

85.—*On Wounds of the Chest.*—By G. J. Guthrie, Esq.—[Mr. Guthrie recommends the treatment of wounds of the chest in the following manner:—]

1. All incised or penetrating wounds of the chest should be closed as quickly as possible, by a continuous suture through the skin only, and a compress supported by adhesive plasters, the patient being afterwards placed on the wounded side.

2. If blood flows freely from a small opening, the wound should be enlarged, so as to show whether it does or does not flow from within the cavity. If it evidently proceed from a vessel external

to the cavity, that vessel must be secured by torsion or by ligature.

3. If blood flow from within the chest, in a manner likely to endanger life, the wound should be instantly closed; but as the loss of a reasonable quantity of blood in such cases, say from two to three pounds, will be beneficial rather than otherwise, this closure may be delayed until syncope takes place, or until a further loss of blood appears unadvisable.

4. If the wound in the chest have ceased to bleed, although a quantity of blood is manifestly effused into the cavity of the pleura, the wound may be left open, although covered, for a few hours, if the effused or extravasated blood should seem likely to be evacuated from it, when aided by position; but as soon as this evacuation appears to have been effected, or cannot be accomplished, the wound should be closed. It must be borne in mind that the extravasation which does take place is usually less than is generally supposed—a point which auscultation and percussion will hereafter in all probability disclose.

5. If auscultation and percussion should indicate that the cavity of the pleura is full of blood, and the oppression of breathing and the distress are so great as to place the life of the patient in immediate danger, the wound, although recent, should be reopened.

6. As soon as the presence of even a serous fluid in the chest is ascertained to be in sufficient quantity to compress the lung against the spine, and time has been allowed for the closure of the vessel from which blood originally flowed, a counter-opening should be made in the place of election for its evacuation by the trocar and canula, which may be afterwards enlarged, unless the reopening of the wound should be thought preferable, which will not be the case unless it should be low in the chest.

Medical Times, April 8, 1848, *p.* 458.

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ALIMENTARY CANAL.

86.—PRACTICAL HINTS ON DENTAL SURGERY.

By JOHN TOMES, ESQ., Surgeon-Dentist to the Middlesex Hospital.

[From an interesting course of lectures on dental physiology and surgery, by Mr. Tomes, we have selected a few articles of great interest to the general practitioner, and first,]

On Scaling Teeth.—This operation consists in removing the tartar from the teeth, and is performed by the help of small steel instruments, of various forms, suitable to the parts upon which they are intended to operate. The point of the instrument should be inserted under the base of the tartar, and by pressing the instrument towards, or rather outwards from, the crown of the tooth, detach the tartar in a mass. Having broken away the bulk of the tartar, each tooth must be freed from the smaller adherent particles, by carefully scraping its surface with the edge of the scaler. The intervals between the teeth must be treated in a similar manner, till every tooth is completely free from concretion. The teeth may then be well rubbed with a piece of cane, or a brush, or a piece of soft wood, loaded with fine pumice powder, or powdered turkey stone, and after this again with a little precipitated chalk. By these latter processes the surfaces of the teeth are well polished, by which their appearance is much improved, and their liability to become again encrusted diminished.

The patient should be directed to well brush the teeth, night and morning, with precipitated chalk, flavoured to the taste of the user. Should the saliva be acid, (you will learn this by the use of test paper) then the dentrifice should contain a portion of carbonate of soda; ʒvij. of chalk and ʒi. of carbonate of soda form a good alkaline powder.

If the teeth are discoloured, patients will often ask you to restore them to their original whiteness. This cannot be done. Acids will for a time improve their appearance, by dissolving the outer surface of the enamel, and thus exposing a new surface, but they soon again become discoloured and decay. Nothing can be more mischievous to teeth than the use of acid tooth-powders, neither should any but an impalpable powder be used, otherwise the teeth will be worn into deep grooves, and are ultimately destroyed.

Areca nut charcoal has the effect of making the teeth look very white, and its use need not be objected to; charcoal made from wood should be forbidden, for it contains silex, and will wear the teeth. In choosing a dentrifice, your first care must be to ascertain whether or no the saliva is acid, and is acting upon any of the teeth. And this point must determine whether the polishing powder shall contain a soluble carbonate or no.

Several years since, a notice appeared in the Medical Gazette, stating that sugar acted directly on the teeth. I put some teeth into sugar and water and in honey, but at the end of six months I could not find that they were at all affected. Latterly much has been said against camphor as destructive to the teeth, though, as far as I know, with insufficient reason.

Medical Gazette. Nov. 26, 1847, *p.* 918.

On Plugging or Stopping Teeth.—A well-stopped tooth, if the operation has not been too long postponed, is perfectly restored to its former durability and usefulness. I removed, last year, from an old man, a molar tooth that had been plugged for thirty years, and had been servicable till within the last two years, when it became loose from absorption of the socket. You will often see teeth that have been stopped ten and twenty years.

Seeing, then, that so much may be gained by this operation in preserving the teeth, you cannot give too much attention to its practice; for while it is among the most useful, it is the most difficult operation the dentist has to perform. This operation is divided into two parts; the preparation of the cavity for the reception of the plug, and the insertion of the plug. In the preparation of the cavity two points must be gained, otherwise the subsequent steps of the operation will be ineffective.

The first of these is to completely remove all the softened dentine; the second, to get a firm and regular orifice, of sufficient size as to enable the plug to be inserted, and at the same time not too large. If the cavity be large and the opening small, it will be almost impossible to make the plug solid in those parts of the cavity which are overhung; and, on the other hand, if the opening be large, and the cavity small and rounded at the bottom like a saucer, the plug will not be retained. The best form of cavity has a circular orifice with perpendicular walls; in fact, cylindrical.

The situation of the disease must regulate our manner of proceeding. If the cavity be situated in the opposed side of a molar, the tooth must be cut away with a sculper or graver till an excavating instrument can be used. If the sides of the front teeth are affected, a piece of vulcanized caoutchouc should be strained tight, and then introduced between the teeth; this, in endeavouring to regain its former figure, will separate the teeth sufficiently for the operator. When the masticating surface of a tooth is carious there is no difficulty in the operation; if the extent of the disease be slight, it may be removed by a broach of proper size. Having reduced the cavity, as nearly as attainable to the conditions I have described, the chips must be washed out and the cavity wiped dry with cotton-wool, and the plug inserted. In making the plug, our aim must be to so perfectly fill the cavity that all moisture shall be excluded, and that it shall be sufficiently hard to resist, equally with the tooth, the wear of mastication. Unless these two conditions are fulfilled, our work will be imperfect, and ultimately fail.

Gold or tin-foil are the best materials for making plugs. Whichever of these be chosen, the method of use is the same.

There are three methods of introducing foil for making a plug. In one the metal is folded into narrow strips, proportioned in width and thickness to the size of the cavity. One end of the strip is, by means of a conveniently shaped stopping instrument pressed to the bottom of the cavity. The strip is then bent, and a fold passed to the bottom of the hole, leaving the first fold projecting above the surface. Fold after fold is introduced till the cavity is tolerably full. A wedge-shaped instrument is then introduced, and the gold pressed towards the walls of the cavity; more gold is, by a similar process, pressed into the cavity so obtained. This process is repeated till the wedge cannot be forced into the plug. A flat-ended instrument is then used to compress the gold in the cavity. When we can make no further effect on the surface of the plug by compression, the surface is filed smooth and burnished. By a careful adherence to this plan, we make a plug composed of layers of metal arranged parallel to the walls of the cavity, and therefore not liable to fall to pieces or come out. But, on the other hand, had we made the folds at a right angle to the walls, and parallel to the bottom of the cavity, layer after layer would have peeled off till little or none of the plug remained, and the decay would have proceeded to destroy the tooth.

In the second method, a piece of foil of sufficient size is rolled hard and spherical between the thumb and finger. This is gradually forced into the cavity, care being taken to get it well in round the outer walls. When the plug has been rendered as solid as possible, the superfluous portion is cut or filed off, and the surface burnished.

The third method of using metallic foil is a combination of the two preceding ones. A piece of foil is rolled up loosely that will readily go into the cavity. When in its place a wedge-shaped instrument is passed into its centre, which has the effect of spreading the gold towards the walls of the cavity. The centre is gradually filled with folds of gold in the manner I have described. The wedge is used again and again till it can no longer be made to enter. The gold is then compressed on the surface, and the superfluous portions removed, and the surface burnished. When the plug is finished in either of the manners I have described, the circumference should be examined by a sharp steel probe. If this can be made to enter at any part, the hole so made should be enlarged by thrusting in an instrument as large as can be introduced, and the hole filled.

Either of the foregoing methods of plugging will answer, if well done. But of these I prefer introducing the metal in folds. The situation of the cavity, and also the size, will have something to do with the selection of the plan of operating. Then, again, one person will be more apt at one manner of procedure than at another. All these matters of detail must be learned in practice.

Where the cavity of a tooth is so large that the walls are too thin to bear the pressure necessary to the insertion of a gold or tin-foil plug, the amalgam of silver or of palladium may be advantageously used. Having prepared the cavity as for the use of foil, a little mercury is triturated in a glass mortar with a small quantity of precipitated silver or palladium, till they unite and form a paste, which is well squeezed in a piece of wash-leather to force out as much as possible of the mercury. The paste is then again rubbed in the mortar, or in the palm of the hand, and then introduced into the cavity. The cavity, however, must be first well dried with lint, and care must be taken to get the amalgam in close contact with the whole circumference of the cavity.

The plug so formed hardens in the course of a few hours, after which the surface should be well burnished. The American dentists condemn this kind of plug, as it seems to me somewhat unjustly. It is undoubtedly far inferior to either the gold or tin-foil plug, but it can be used where they cannot, and it is surely better than none. I have seen a mere shell of a tooth, that would have broken away on the first attempt at introducing foil, rendered useful for years by an amalgam plug.

Before leaving the subject let me warn you that unless the cavity be well prepared by the total removal of the softened dentine from the walls, and by getting a good, firm, and well-shaped orifice, free from acute angles, no plug will answer, and least of all the amalgam. It will fall out or become loose within twelve or eighteen months, and frequently in much less time, and decay will proceed. Teeth plugged with silver amalgam usually become stained of a deep blue-black colour. When the palladium amalgam is used there is little or no staining, if the excavating be perfect. The latter amalgam is therefore preferable.

Medical Gazette, Nov. 26, 1847, *p.* 918.

On the Use of the Forceps in Extracting Teeth.—Forceps should be constructed and used upon the principle of lengthening the tooth for the extraction of which they are intended: thus enabling the operator to move it from side to side, or rotate it if the fang be single, and of a shape admitting of such motion.

After these lateral movements for destroying the membranous union have been effected, the tooth may, unless the fangs have some peculiar position or shape, be raised in a perpendicular direction, leaving as little injury from its removal as the operation can admit.

When forceps are used for the extraction of teeth, the operation is divided into three stages—1st. The seizure of the tooth; 2d. The destruction of its membranous connection with the socket; 3d. The removal of the tooth from the socket. When you commence operating, it will be of great service to you, and advantage to those operated on, that you should pay strict attention to these stages, and that each should be well and efficiently executed before you proceed to its successor; for, should the tooth be unskilfully seized, the crown will be broken off in the attempt to detach the tooth from the periosteum of the socket, until which is effected, the fangs cannot be removed from their bony cells. You will find that a tooth will resist a great force applied in a line with its axis, or, in other words, if you attempt to pull a tooth straight from its socket.

In seizing a tooth, the jaws should be closed lightly on the tooth, and inserted under the free edge of the gum, and then *forcibly* driven down to the edge of the alveoli, or even a short distance into them. I say forcibly, because all beginners, and even some practised in the use of forceps, are liable to failure because they do not use sufficient force: they seize the tooth at the edge of the gum, instead of at the edge of the alveoli.

I wish to impress upon you the absolute necessity of laying hold of the tooth as far down towards the fangs as you can possibly get the instrument. An old and successful operator, when instructing another in the use of forceps, said—"Push them into the sockets as though you intended they should come out at the top of the head, or under the chin."

Medical Gazette, Nov. 26, 1847, *p.* 923.

[Mr. Tomes remarks that as the end to be attained in the application of forceps is that the pressure may be diffused over as large a surface as possible to avoid fracturing the tooth, it is desirable to have forceps made of various shapes and sizes. On the mode of using the instruments, he says:]

The forceps having been well pushed up to the alveoli, and the tooth firmly grasped, attempt, by a firm and steady turn of the wrist, to twist the tooth in its socket, and, so soon as you feel it give, it may be drawn from its socket with little effort.

The incisors of the lower are smaller than those of the upper maxilla, and much more compressed laterally. Forceps for the extraction of these teeth will require to have the jaw which is to applied to the posterior smaller than that for the anterior surface of the neck. The jaws of the instrument should be straight; but it will be found convenient to have the handles curved, so as to avoid the upper maxilla when the mouth cannot be opened wide. When the tooth is grasped it must be forced outwards, accompanied with the slightest possible degree of rotation, and, when it is felt to yield, draw upwards.

The cuspidati require for each a pair of forceps made upon the same plan as those for the removal of the incisors, except that they must be larger and rather stronger Those for the cuspidati of the lower jaw should, like forceps for the incisors of the lower jaw, have the handles slightly bent. Sometimes these teeth are very small, in which case forceps adapted to the adjoining teeth may serve for their removal. These teeth, whether in the upper or the lower jaw, may be detached from their membranous connection with the jaw by a rotatory movement, and then leave the socket readily.

The bicuspides will be extracted with instruments similar to those already described, except that there will be a little difference in the jaws, which must be accurately fitted to the neck of the tooth. These teeth are not very frequently liable to much variety in size, so that an instrument which is well adapted to an ordinary bicuspis tooth will apply itself to almost all. I have forceps in which the jaws are bent at right angles with the handles, and open laterally, for the extraction of bicuspides of the inferior maxilla. But they do not answer so well as straight instruments, it being less convenient to apply the necessary force, and more difficult to regulate its direction. In extracting teeth which have their fangs laterally compressed, and are placed in a row with other teeth of like-shaped fangs, the only available movement will be at right angles with the row, and in the direction of the greatest diameter of the fangs. This may be obtained whether the forceps be straight or rectangular; but with an instrument of the latter shape the movement must be effected by rotation of the wrist with a motion upwards. The centre of the rotatory movement will be either at the extremity of the jaws of the instrument, or else in a line with the handles of the instrument and wrist. Force applied in this manner would seem to be given at great disadvantage, and much expended on the alveolus; there inflicting injury, which, although in the vast majority of cases it is scarcely complained of by the patient, prevents the mouth from so speedily recovering from the operation.

The bicuspids of the upper jaw have the necks compressed laterally. In removing them, whatever be the form of the instrument used, the force must be first applied in a direction outwards and at an angle to the dental arch. The tooth should be moved outwards and inwards, and then drawn downwards. But it must be borne in mind that in forcing it outwards or inwards we desire only to break its connections with the socket, and not to draw it out; and that if the force be continued in this direction with the hope of removing the tooth, it will be broken off.

The bicuspids of the lower jaw have more conical fangs than those of the upper, and hence may be detached by rotation, and then lifted out of the socket.

When I say rotation, I do not mean that the tooth shall be twisted a half or even a quarter turn, but that it shall be twisted till the attachments are felt to give way. If more force is required to effect this than you deem judicious to employ, then the direction of the twisting may be changed, or the movement abandoned. There are some teeth that vary so much from the usual form of root that they cannot be turned in the socket. The degree of force, in this and in all other cases of like operations, that it is necessary to employ, can be learned only in practice.

On extraction of the molares.—The molares of the superior maxilla have three fangs—two external, one internal. Of the two external fangs the anterior is the largest, and is placed in a plane external to the posterior fang, which is shorter as well as smaller. The third, the internal fang, is thicker and of greater length than either of the others, and is situated opposite to the posterior external fang, and the space between that and the anterior external fang. The divergence of the fangs takes place at the point where the tooth becomes concealed in the alveolus, leaving the neck with a form such as would result from the agglutination of the fangs, having the described relative position. At this point the forceps should be applied for the removal of the tooth. Instruments—for it will require two, one for each side, right and left—must be made upon the same general principles as those already described.

The molares of the superior maxilla have the two external fangs parallel to each other in their direction in the alveoli. The internal, which is not only the largest but the longest also, diverges from the two preceding fangs, and passes upwards and inwards towards the internal wall of the antrum, and is enclosed in tolerably dense bone. The external alveoli are composed of thin and porous bone. In removing these teeth, then, the tooth being firmly grasped at its neck, the first motion should be slightly inwards, to disengage the fangs from the external alveoli. The force should then be directed downwards and outwards in the direction of the internal fang. If these precautions be observed, no difficulty will be found in removing the superior molares. The first and second molares of the superior maxilla are so nearly alike in size and shape that an instrument well fitted to one will serve equally well for the removal of the other.

The first molar, however, when left alone by the previous removal of the second molar and the second bicuspid, and the vacated alveoli have been filled with solid bone, offers great resistance to extraction, and is sometimes broken off in the attempt. Indeed, an isolated tooth surrounded by firm bone is always more difficult to extract, and requires more care than one of a continuous row of teeth.

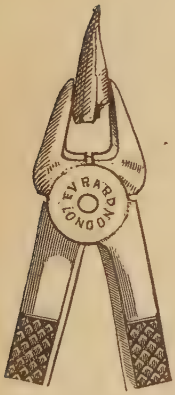
In removing molares of the lower jaw, the blades of the instrument should be carefully thrust down to the free edge of the alveoli, which part of the operation is easily effected in consequence of the decreasing size of the teeth from the crown to the fangs. Having obtained firm hold of the neck of the tooth, the first motion should be inwards, by which the tooth is detached from the external plate of the alveoli: this being done, the tooth should be forced outwards and upwards, and so removed. The fangs of these teeth have, however, not unfrequently a curve backwards; if, therefore, a tooth of this kind offers considerable resistance when its extraction is attempted, the movement, after the tooth has been forced laterally, should not be perpendicular, but in a curved direction similar to the inclination of the fangs.

Hitherto I have assumed that a considerable portion of the crown has remained, and that the tooth, therefore, could be readily grasped at its neck. But it often happens that the tooth has decayed away, or has been broken off even with or below the edge of the gum, in which case the instruments I have at present brought to your notice are inapplicable. We must use stump-forceps, or the elevator, to effect the removal of such teeth. There are two forms of stumps, single and double, or triple. Single-fanged teeth necessarily have only a single stump, but the molar teeth may have their fangs united by the neck. If the neck be destroyed, then the fangs will remain as so many single stumps. For the extraction of single stumps we require one kind of instrument, for double another, and for triple-fanged stumps a third.

In forceps for removing single stumps the jaws should be grooved to fit the stump, made very sharp at the edge, and of steel, so that the edge may be renewed from time to time on the oil-stone. When the instrument is closed, they hold the stump, and fit to its whole length.

The general defect in these instruments is that they are not open enough near the joint, and the consequence of this is, that in closing they press on and crush the stump at its broadest and most fragile part, instead of embracing it lower down in the alveolus, where it is sound and can resist pressure. The jaws of forceps for removing single roots must be similar in all cases, but they must be placed at different angles with the handles of the instruments to suit different parts of the mouth; and the handles themselves must, for molars of the upper jaw, be slightly curved. (See figs. 53, 54, and 55.)

FIG. 52.



FIGS. 53, 54, and 55.

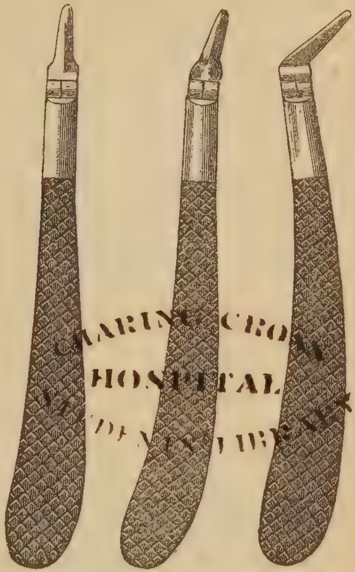


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FIG. 52.—Forceps for extracting stumps, with the jaws made so as to fit the stump throughout its whole length.

FIGS. 53, 54, and 55.—Forceps with jaws similar to Fig. 52, but differently placed as regards the handles, to enable the operator to reach the various situations in which stumps may be placed.

FIG. 58.

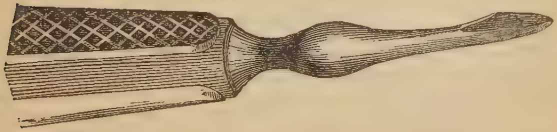

FIG. 58.—An elevator, with one side slightly grooved, to facilitate sharpening.

The elevator is the best instrument for removing stumps of the wisdom-teeth of the lower jaw.

I will now give you some account of this useful instrument, for the introduction of which into general practice I believe we are chiefly indebted to Mr. Bell.

The part applied to the tooth is in shape something like a spear-head. Two sharp edges meet in a point, the one side being flat or conical, while the other is rounded. The instrument is furnished with a good strong and large handle, and altogether is about five inches long. The edges and the point must be kept good by the frequent use of the oil-stone. Hence, it is convenient to have one surface hollowed, for then the edge can be renewed with less trouble.

The elevator may be used in two manners. The point may be forced into the alveolus, and then, by turning it towards the tooth to be removed, and making a fulcrum of the alveolus or an adjoining tooth, prise out the offending tooth much in the same manner you see a pavior raising a flag-stone; or the point may be stuck into the side of a stump, and by pushing it outwards in a line with the axis of the stump, force it from its socket. This latter plan can only be adopted when the stump is loose or the alveoli lowered by absorption, so that the retaining power of the stump is much diminished.

Where two teeth are standing together, either may be removed by forcing the elevator edgeways between them, and turning it when in that situation towards the one to be extracted. The round side will rotate against the one, while the lower edge will cut into and raise the other from its socket.

Medical Gazette, Dec. 10, 1847, *p* 1005.

On the Construction and Management of Artificial Teeth.—The base of artificial teeth is usually formed of sheet-gold, or of dentine—the dentine of the hippopotamus, or of the walrus-tooth—and by the following means:—Bees-wax, previously softened by immersion in hot water, and well kneaded, and then placed in a horse shoe shaped tray of ordinary size, is introduced into the mouth, and carefully pressed against the gums until they are perfectly imbedded. The tray of wax is then as carefully withdrawn, and if successfully, will present a perfect mould, or counter-cast of the gums. Into this plaster of Paris is poured and allowed to set, after which it is removed from the wax by softing the latter, and then presents a cast, a fac-simile in size and form, of the gums—supposing, of course, the mould to have been correct. It was usual in my workroom, and I believe in all others, to assume that it was correct, and upon that faith to proceed to construct the teeth from and to fit the plaster cast so obtained, until about two years since, when I had the gratification to discover means whereby the correctness of the cast could be readily tested. Since this time I have always availed myself of the test previous to commencing the teeth.

The means I allude to, with other appliances for teeth-making, formed the subject of a patent in 1846. It consists in the compounding of a material like in composition to extremely hard sealing wax, but which is soft and plastic at the temperature of boiling water, though hard and unyielding at that of the human body. This material, when softened, is moulded on the plaster cast into the shape of the required teeth. Thus we have, at little or no cost of time, a model of the new teeth, on which, by the aid of a little hot water, we can work any required changes, should it on being placed in the mouth need any. And this, of course, will depend on the faithfulness of the cast on which it has been moulded. If the cast be correct, the model will fit equally well both the cast and the mouth, but should the cast be faulty, the model made on it will not fit the mouth, whereby we discover the error in the cast, and proceed to its correction. The faulty cast is thrown away, and the composition model is slightly softened by immersion in hot water. When in this state it is carefully moulded to the surface of the gum, and then allowed to harden. When hard it is again put in the mouth, and, if found to fit, is used to furnish a plaster cast in the same manner as the bees-wax mould did in the first instance; by which measure we obtain a known *perfect* cast, to which we may make the new teeth without fear of failure. Should gold be chosen for the base, casts in metal, zinc, or brass, are made from the plaster cast, and from these again, counter-casts, or reverses in lead are made, between which and the cast, gold plate is hammered, until it has assumed the form, and fits perfectly to the surface of the cast, and, of course, also to the gums.

If dentine be chosen for the base, it is usual to cover the plaster cast with red pigment, and to place upon it a block of dentine in the position it is required to take when fitted. The block will at first touch only at or on two points, and these will be marked by the adhesion of a little of the pigment. The points so indicated are cut away with sculper; the contact is renewed, and the reddened points again removed. In renewing the contact between the block of dentine and the paint-covered cast, great care should be taken to keep the two in the same relative position as on each preceding occasion. This tedious and somewhat uncertain process is repeated again and again, and to the extent of many hundreds of times, till the block is cut to fit the surface of the cast. The superfluous portions are then removed, and the base so made prepared for the reception of the teeth.

In my own workroom the base is carved by a patent machine, which altogether supersedes the hand carving and the pigment. A model of the required teeth is made in the moulding composition, and this is fixed in the machine, and then copied into dentine with much saving of time, and without the possibility of error.

For the invention of this instrument I had the honour to receive a gold medal from the Society of Arts.

The base, so far as its gum-fitting surface is concerned, having been finished, we have next to select the teeth which the base is destined to carry. Teeth used in making artificial teeth are of three kinds: natural teeth, mineral, and carved teeth—that is, teeth carved out of dentine. The latter, when dentine is used for the base, are carved out of the same block in one piece. When natural or mineral teeth are selected, they are fixed to the base by pins. In speaking of artificial teeth, dentists divide them into front teeth and side blocks. The front teeth are like, and have the same names as the natural teeth, including the bicuspides; while those corresponding to the molar teeth are made in one continuous piece, and are called the side blocks of the piece. I should here tell you that the teeth with their base, whether few or many, are termed a *piece*, an upper or under piece, as they may be for the upper or lower jaw.

The teeth are fixed to the base by pins passing through, or nearly through the centre of each tooth, and soldered to the gold or riveted through the dentine, according as the base may be composed of the one material or the other.

Artificial teeth are retained in the mouth by three different plans; (1st.) by spiral springs attached by their ends to the pieces of the two jaws, when the set is complete, or when the under teeth are perfect, to caps fitted to these teeth. The springs themselves are made of gold wire, twisted spirally round a small piece of cylindrical steel. They are fixed to the teeth by a swivel or loop, through which a pin passes to the base or to the blocks; while the swivel itself terminates in a piece of wire, which exactly fits into the interior of the spring, into which it is pressed. With this arrangement the springs are readily detached, even by the patient. Should the spring fit too loosely on the swivel, a little flos silk should be wrapt round the latter before pressing it into its place in the spring. And this, too, may be done by the patient, should a spring accidentally leave the swivel.

(2.) By clasps, or bands, of elastic gold, passing partly round natural teeth. The clasp is attached in a part only of its length to base, the remaining portion is left free, and springs open to receive the tooth. If at any time the clasp does not firmly embrace the tooth, it is only necessary, to make it do so, to bend the free portions towards each other; it will then again take firm hold.

(3rd.) By the pressure of the atmosphere. The gum-fitting surface is so accurately fitted to the surface of gum, that the saliva and the air are excluded, whereby the pressure of air acting only on that surface of the teeth exposed to the tongue, holds them in tight contact with the gums.

Teeth on this principle, though the most difficult to construct, are the best kind when well constructed, seeing that they are wholly independent of any remaining natural teeth of the same jaw, and also of those of the opposite jaw.

Pneumatic teeth are usually made of dentine, while those retained by clasps commonly have a gold base. Sometimes the base is made of dentine, and fitted round or between remaining natural teeth, and is thus retained. Then, again, teeth may be constructed to be retained by a combination of two of these plans.

It is of great importance that you should know how to preserve false teeth, for in the absence of proper attention they are soon destroyed, and still sooner become offensive. The wearer often seems singularly unconscious of the offensive odour arising from neglected teeth,—not so, however, the bystander; he is almost poisoned by the offensive breath of his neighbour. Dentine is used in the construction of most sets of teeth, and this substance you are aware, if neglected, is soon acted on by the saliva, and gradually suffers decomposition; hence arises the stench.

I have told you on several occasions that dentine, when highly polished, resists the solvent action of the saliva. The patient should pay great attention to this point. The surfaces of the teeth should be well brushed with a little precipitated chalk at least twice a day; and after brushing, rubbed with a dry soft towel, or handkerchief, or a piece of wash leather. By these means a beautifully polished surface may be retained. When not in the mouth, the teeth should be kept in a well-stoppered glass jar, filled with two-thirds of spirits of wine, and one-third water. The antiseptic quality of the spirit aids much in preserving the dentine, and moreover keeps them sweet. By great attention, cleaning, and immersion in spirits of wine when out of use, artificial teeth will last quite as long again as they would if these means were neglected. Artificial teeth cannot be too well kept, but they can very easily, and frequently are, too ill kept. If the base be gold, and the teeth mineral, still they should be well cleaned each day: if the base be gold, and the teeth dentine, there is yet greater need of frequent and careful cleaning. If the base be of dentine, and the teeth natural teeth, the piece will soon be destroyed if cleaning be neglected. Nothing short of never removing artificial teeth from the mouth should be more strongly deprecated than the habit some people have of taking them out only once or twice a week, and at other times cleaning them in the mouth. They cannot be well cleaned when in the mouth, and the surface of the mouth cannot remain healthy when perpetually covered. It must be borne in mind that the gums are covered with epithelium, and that it is the nature of this tissue to be perpetually forming below, while it is suffering perpetual loss from its surface. The scales are rubbed off by the tongue and food. Now if the epithelium be perpetually covered by the base of artificial teeth, the formation will still go on, but the loss from the surface is retarded. The outer epithelial scales may separate, but cannot escape from the surface: they, therefore, accumulate under the base, and there become highly offensive. After a while the mucous membrane inflames, and the development of epithelium is suspended or vitiated; the scales no longer adhere to each other to form a membrane. If the teeth be removed after the mouth has got into this condition, the surface which has been covered will be found red and vascular, and will bleed on the slightest touch. The fitting surface of the teeth will be coated with a white sebaceous matter highly offensive.

Artificial teeth should not, as a habit, be worn during the night, unless their presence is necessary to the comfort of the patient, or for the preservation of the remaining natural teeth. In either case it is desirable that the patient should have a set for the night—a set with a much smaller base than those used for mastication; and when practicable, a piece fitted to one jaw only, and extended to the opposite jaw for the gums to close on. All that is required of night-teeth is, that they shall keep the jaws apart. The surface of the gums is naturally uncovered, bathed with saliva, and subject to friction; it is desirable, therefore, that it should be left free eight hours out of the twenty-four; and, if some part must be covered even during night-time, let that be as small as possible.

Medical Gazette, *Dec.* 24, 1847, *p.* 1093

87.—ON THE TREATMENT OF INDURATED TONSILS.

By Dr J. Naudin.

The tonsils, by their situation, are often exposed to attacks of inflammation, which, after repeated occurrence, not unfrequently passes into a chronic state of induration. The disease is generally non-malignant, and affects both tonsils; carcinomatous induration being, on the contrary, much more rare, and affecting usually but one. The seat of this hypertrophy is neither the mucous membrane nor the cellular tissue, though their nutrition may also be altered; but in the glandular substance itself. The cause of the frequent occurrence of hypertrophy of glandular organs is, that possessing a supply of arterial blood, infinitely greater than is necessary for their nutrition, a large portion of which is destined to supply the material for secretion, any circumstance which produces a suppression of this secretion causes the excess of arterial blood to become expended on the nutrition of the glandular substance, thereby inducing its hypertrophy and induration. Physicians are generally very neglectful of chronic inflammation of the tonsils, too often allowing the case to run on, and finally putting it into the hands of the surgeon for excision. The means, if any, employed with the view of reducing the tumours, are generally insufficient; and our author, instead of blisters, astringent gargles, iodine, &c., substitutes gentle cauterization, as employed in chronic inflammation of other organs. Instead of producing a slow progressive destruction of the tonsils, he aims at their preservation. and for this purpose employs a solution of nitrate of silver, 3 gr. to ℥j of water, increasing the strength by 3 gr. up to ʒij of the nitrate, in the same quantity of water, and also applying the solid caustic to the surface of those hollows which usually exist in such tonsils, so that all parts may be equally affected. During one sitting the tonsils are painted twice or thrice; the mouth is then well washed with water. This cauterization must be repeated every two or three weeks, until the tonsils are restored to their normal size, and then gradually discontinued; it produces no ill consequences, and even children speedily return to their play. Should the parts become accustomed to the caustic, it must either be discontinued for a time, or another substituted, as Lugol's diluted solution of iodine. In two cases related by our author, the nitrate alone was employed. Both, aged 13 and 14, had been affected for years, and were cured in two and a half to three months; in a third case, that of a girl aged eleven, the disease was extensive and obstinate, requiring four months' use of the caustic, besides the use of hyd. pot. and iodine internally, and as ointment. In all these cases no return has been observed after the lapse of years, and the previous disposition to inflammation of the tonsils has been extinguished.—*Journ. de Toulouse*, Juin et Juillet, 1846.

Monthly Journal, Dec., 1847, *p.* 438.

88.—ON INTESTINAL OBSTRUCTION.

By B. Phillips, Esq., F.R.S , &c.

[Mr. Phillips bases his observations on the consideration of 169 cases of more or less complete obstruction which he has collected.]

The result of a careful analysis of symptoms and cases went to satisfy the author's mind that no arrangement of symptoms is so definite or constant as to make a diagnosis of the cause of obstruction conclusive. Supposing operation to be resorted to, it is of course very desirable to ascertain the seat of the affection; and here the difficulties are not less formidable than those which occur in attempts to determine the cause of the obstacle. The history of the case may give assistance in some instances, the existence of a tumour in others, and the distended intestine in a few cases; but in most instances we shall be left in doubt. The author then stated the results—unfortunate enough, certainly—of ordinary treatment; and concludes that there are cases in which recourse to surgical operation is justifiable. He showed that the abdominal walls had been cut through in more than fifty cases, for the purpose of affording relief, stating the particulars of many, and the results of all; and showing that of those operations, twenty-four appear to have terminated favourably. He showed, further, that some of those operations were undertaken with a view to seek the object and to remove it, but in very few instances has the object been accomplished, the ordinary result being the establishment of artificial anus; and he regarded this as the only practicable result of operation in cases which do not prove fatal.

[Mr. HILTON observed that:]

In the cases which he had seen of impassable obstruction in the upper part of the jejunum, the deficient secretion of urine was a most remarkable feature; and he believed when this symptom was observed in association with a flattened or concave condition of the abdomen, the two in combination might be considered almost pathognomonic of the seat of the obstruction being near the stomach. He would merely take this example as an instance of what he thought might possibly have been ascertained if the contents of the paper had been grouped in reference to the position of the obstructing cause. He agreed with the author regarding the propriety of the median section of the abdominal parietes, when the operation was deemed necessary, and the exact seat of the obstruction not known; but after opening the abdomen, instead of attempting to trace the distended intestine, with the view of reaching the constricting cause, he would prefer the plan which he had himself adopted, of tracing the empty intestine towards the constriction, and using it to discover the obstructing cause. In some of the cases related in the paper, it was mentioned that large and distending quantities of air had been thrown into the intestines, with the intention of relieving the obstruction. He doubted the propriety of such a proceeding; for he had observed in practice, and as the result of direct experiment upon the intestines in lower animals, that extreme distention causes paralysis of the intestinal muscular fibres. He could fully confirm an observation the author had made, that although the long tube may have been introduced into the rectum to the extent of two feet or more, instead of its having travelled to an equal length along the intestinal canal, it had actually gone but a very short distance, and had then become coiled upon itself.

Dr. TODD disagreed with Mr. Hilton in considering a flat or concave state of the abdomen a diagnostic mark of the obstruction being situated high up. He thought that the author was right in the view he had taken on this point, and related two cases, in which the abdomen was flat and concave, the intestines containing no gas, in both of which instances the obstruction was low down: in one case, a band extended from the ileum to the mesentery, coiling round a fold of intestine; and in the other case, the strangulation was at the internal abdominal ring, though no evidence of its being so situated developed itself before death. The conclusion he had come to, in reference to the flaccid state of the abdomen, in cases of obstruction, was this—that if inflammation existed, tympanitis was present, and if it did not exist, the belly was flat or concave. As to the question, whether, in obstinate constipation, we should, or should not, administer purgatives, he was convinced, that after the first day or two we should do away with purgatives altogether; or, if we did use them, we must employ the gentlest and mildest of those agents. He had not seen cases of this kind cured by means directed particularly to the removal of the obstruction, although, in one instance, the obstruction had yielded to the introduction of a moderate quantity of air into the intestines. He did not advocate the use of a large quantity of air in these cases, as such a proceeding was likely to paralyze the intestines.

Dr. Bright remarked that our diagnosis of the situation of the stricture in cases of internal strangulation was but imperfect, but he had observed, in one or two cases in which the obstruction was situated in the small intestines, the peristaltic action of these could be seen more distinctly than when the obstruction was in the colon. There was, however, in most cases, excessive difficulty in arriving at a knowledge of the exact seat of the strangulation. He suggested that the paper might be incorrect in its statistics of the fatality of these cases, as it only appeared to embrace those instances of the disease which might be almost considered hopeless, for it was well known to what a great extent, as to time, obstruction might exist, and yet the patient get well, contrary to the expectation of the practitioner in attendance. He remembered several cases of this kind, in which the operation proposed might have been resorted to, as apparently the last and only remedy. He related one case in which constipation, with vomiting, had existed for six weeks, the abdomen eventually becoming as large as that of a pregnant women at the ninth month. This patient eventually did well. In these cases, all violent means, whether purgatives or others, should be avoided after the first few days, the patient receiving more benefit from mild and gentle remedies.

Dr. Copland thought, that in these cases, after the first day or two, all active purgatives should be avoided. He related two cases of obstinate constipation, attended by vomiting and unaccompanied by inflammation. The first of these was the case of a woman in whom the obstruction continued for three or four weeks. For several years previously she had been in the habit of chewing and swallowing sealing-wax. Drastric purgatives were given at first, but soon discontinued, and after soothing the stomach, she was ordered to take a teaspoonful of sweet oil several times a day, and to use an injection of the same agent twice in that period. Eventually, large masses, consisting of agglutinated sealing-wax, were evacuated, and the patient did well. In the other case, the woman was twenty-seven years of age, and had been long in the habit of chewing her curl-papers. Symptoms of obstruction came on, which, under similar treatment to that employed in the last case, gave way, and sixteen or seventeen large balls like hen's eggs came away, consisting of hair-paper.

Mr. Travers remarked, that the subject under discussion was almost unapproachable, both for its wideness and the difficulty of our diagnosis in cases of internal obstruction. In fact, cases of this kind appeared to him to be beyond the pale of surgical assistance, but after the extraordinary cases in surgery which had occurred of late, he should not be suprised at anything. With respect to the statistical report which had been given in the paper, it was, no doubt, of value; but he could not help cautioning the meeting against taking literally all the statements made. He considered that the cases referred to by the last speaker were not such as were meant to be discussed by the author of the paper, who had confined his observation to cases of valvulus, fungous tumours in the alimentary canal, to stricture, an envelopment of a portion of intestine by some adventitious membrane, or its passage through a breach in some membrane, and to invagination. Now he (Mr. Travers) considered the simple questions to be discussed were these:—First, do obstructions dependent on any of these causes admit of being localized in such a manner as to guide the surgeon in any operative precedure he might think it desirable to undertake; and, secondly, were we justified in exploring the abdomen to ascertain the nature and seat of the obstruction, with a view to its removal. His own experience was, that the case was hopeless at the time when any operation would be justifiable. Before such a proceeding would be warrantable, ileus of such a character as not to be relieved must exist, and with this, inflammation to such an extent as not to allow of further delay. Well, then, if the surgeon could diagnosticate, with tolerable accuracy, the seat of an invagination for instance, and explored the abdomen, the intus-suscepted portion of intestine could not be drawn out so readily as the paper would lead us to suppose; for in consequence of the inflammation which had existed, or did exist, the serous membrane of one portion of intestine had become so agglutinated to the mucous membrane of the other, and become so thickened, as to make it almost impossible to separate the united portions. With regard to the cases which had convalesced under the care of Dr. Bright, and cases of a similar kind, the obstructions here were evidently not the result of stricture of intestine by a divided mesentery or adventitious band, or from stricture, but were dependent upon some absorbable tumour which compressed the canal. Cases of this kind were not uncommon, but if the tumours were of a malignant character, recovery was not to be expected. He had at present under his care a young gentleman suffering from some morbid condition of the intestinal tube just below the umbilicus; he had suffered for some months from attacks of a spasmodic character, which came on when the bowels were constipated, and were only removed by the mildest purgatives, and the most gentle means, In conclusion, he might observe that the class of cases described in the paper were generally of a hopeless character; every case was of itself a study, each one being different, and the causes so various, that we could not generalize on the subject.

[In reply to Mr. Travers's remark on the difficulty of withdrawing from the constriction, an invaginated portion of intestine, Mr. Phillips showed that in some of the cases he had narrated this had been done, and with success.]

Lancet, Nov. 20, 1847, *p.* 551.

89.—ON INTERNAL STRANGULATION OF THE INTESTINES.

By J. Mackenzie, Esq., Naval Hospital, Archangel.

[Mr. Mackenzie remarks, that, considering the great fatality of this disease, if left to itself, it is strange that operative interference is not more frequently resorted to. An operation cannot make matters worse than, in the majority of cases, they are; while it is not unlikely to be successful if a correct diagnosis can be made. There is one class of cases which Mr. Mackenzie thinks can be diagnosed with almost certainty,—cases of "*dislocation of the sigmoid flexure of the colon.*" Mr. M. says,]

I use the term dislocation, as being more applicable, inasmuch as it implies the operation of some active force, considering that condition necessary before a sudden displacement can take place. That the intestine is torn from its attachments by a sudden force, I am fully convinced, from having discovered the mesocolon lying in loose shreds amongst the intestines, saturated with extravasated blood: a circumstance which could not in any other manner be accounted for.

What renders the sigmoid flexure so peculiarly liable to dislocation, I am at a loss to determine. In those cases which have come under my observation, the imprudent use of raw indigestible substances, as cranberries, turnips, cabbage, &c., was suspected as the cause of the disease. Possibly violent distension of the tortuous gut, by flatus, may force it, on physical principles, to assume a straight position, and thereby a strain being necessarily made on its attachments, contribute to its separation. In whatever manner the displacement is effected, the result is remarkably uniform: the intestine is thrown from its natural situation towards the centre of the abdomen, and receives a twist at its termination in the rectum, which causes complete obstruction of the passage; the small intestines get coiled round it in such a manner as to strangulate the gut by the free margin of the mesentery. In these cases, while all the symptoms of strangulation and obstruction of the bowels are present, there is one symptom never absent, which, respect being had to the history of the case, leads to a correct diagnosis, namely, that it is impossible to throw up injection per rectum in any quantity, for as soon as the gut is filled as far as the twist or volvulus, which is always low down, the water or fluid injected flows out as fast as it is thrown up, independent of any action of the rectum itself. Besides, the introduction of the long tube is impracticable, being always arrested at the obstruction.

It is evident that no method of treatment, save by operation, can possibly do any good in this class of cases. The administration of purgatives in these as well as in every other case where there is mechanical obstruction, cannot be too severely reprobated, inasmuch as they invariably accelerate the fatal result, and add to the sufferings of the patient.

[Mr. Mackenzie illustrates his views by a detail of three interesting cases, for which we must refer our readers to the paper itself.]

Medical Gazette, March 10, 1848, *p.* 407.

90.—ON OPERATION FOR HERNIA EXTERNAL TO THE SAC.

By Dr. J. Duncan, Senior Surgeon to the Edinburgh Royal Infirmary.

[This operation, which was first proposed by Petit in 1718, and has been more lately advocated by Sir A. Cooper, Mr. Luke, Mr. Liston, but especially by Mr. Key, (and, we may add, by Mr. Teale,) is not, Dr. Duncan thinks, so generally adopted as it ought to be. Dr. D. says,—]

It has been remarked by Mr. Luke, that there are two causes which influence the mind of the surgeon, tending to create, on his part, a temporising and procrastinating practice—these are, the general knowledge which he has acquired of the unfrequent fatal termination of hernia when returned by the taxis, and the frequent fatal sequence of operations. If, says the same surgeon, that presumption be correct, the best and most useful endeavour will be to strip the operation of its terrors, by substituting in its place one simple in its execution, and devoid of the ascertained dangers to which it exposes the patient. By the adoption of Petit's operation in place of the ordinary operation, I think this beneficial substitution is attained; an opinion which, if equally impressed upon the minds of surgeons in general, will doubtless remove the chief obstacle preventive of the early recommendation of operation.

[Dr. Duncan notices the various objections which have been urged against this operation. One is the alleged difficulty of its performance: this he thinks is exaggerated. Another is, that when the constriction is caused by the neck of the sac itself, we are liable to return the sac along with the viscera when strangulation would still be maintained. But these cases are rare: and indeed if proper precautions are taken, and the pressure applied in a proper manner, there is less danger of returning the hernia *en masse*, than when reduction is attempted by the taxis. Dr. Duncan proceeds to say,—]

The most serious objection undoubtedly is, the danger of returning the bowel or omentum in a state of gangrene. Wherever there is any suspicion, either from the length of time that the strangulation has existed, or from the symptoms, that the intestine is in this state—then it is the clear duty of the surgeon to proceed in the ordinary way to open the sac, and to give exit to the contents of the bowel. In some cases, the existence of gangrene is pretty unequivocally pointed out by the symptoms; but there are others in which it may exist, and there may be nothing to indicate with certainty the actual state of matters; still there is generally sufficient to give rise at least to strong suspicions, and of course to induce the surgeon to proceed in the usual manner. The return of a portion of bowel in such a state, would be attended with considerable risk of fæcal extravasation when the slough separated, and there is no doubt that the resistance of the undivided sac would act injuriously; but perhaps less so, as has been argued, than when sloughing takes place after reduction by the taxis,—the only barrier in addition to the recent adhesion of the integuments, as in the operation when the sac is divided, being a single layer of serous membrane, which had already been partially detached from neighbouring tissues, and would readily slough under the first burst of inflammation excited by fæcal matter in immediate contact with it. In some cases we find, when the sac is opened, that the bowel, though not actually in a state of gangrene, presents such appearances as to indicate an approach to it; and in others we find, though the bowel appears at the time to be in a healthy state, that in a few days a discharge of fæces takes place by the wound, indicating either perforation by sloughing or ulceration. The risk of this occurring, Mr. Key considers, and I believe with justice, to be much diminished by this operation; the preserving the sac entire, diminishing the chance of inflammation, which, in the weakened condition of the bowel, is the cause of the subsequent sloughing of the coats. This objection does not, of course, apply to cases in the early stages of strangulation; and fortunately cases of gangrene are comparatively rarely met with, surgeons generally being now strongly impressed with the importance of early operative interference, and more alive to the danger of long-continued attempts at reduction by the taxis and its adjuvants.

Monthly Journal, March 1848, *p.* 633.

[Mr. Luke lately read before the Medico-Chirurgical Society, a paper containing the results of his experience in this operation. We find from his paper that,]

Inclusive of selected cases occurring between 1831 and 1841, the author stated that he had attempted the performance of Petit's operation in eighty-two instances, which, with four exceptions, likewise comprised all the cases that had come under his care since 1841. Of this number the operation was completed, without opening the sac, in fifty-seven. In twenty-five it was necessary to open the sac to complete a reduction of the hernial contents—the opening varying in extent from half an inch to one inch and a quarter. With respect to the mortality amongst these patients—of the fifty-seven in whom the sac remained unopened, seven died; of the twenty-five in whom the sac was opened, eight died. The author considered, however, that for statistical purposes it was preferable to exclude the selected cases (twenty-six in number), together with four other cases, of which three were considered moribund at the time the operation was performed, and the fourth died of secondary stricture six weeks afterwards. Of the remaining fifty-two cases, the sac was opened in twenty-one, of which three died, and not opened in thirty-one, of which two died. Of the cases in which the sac was opened, in ten the strangulation of the contents had existed, before the operation was performed, under twenty-four hours, of which number one died; in eight, above forty-eight hours, of which one died. Of the unopened cases, the strangulation had existed in thirteen under twenty-four hours, of which not one died; in eleven, under forty-six hours, of which one died. The author considered it important that the small size of the opening made into the sac, in the former class of cases, should be borne in mind, as it doubtless had an important influence in diminishing the ratio of mortality attached to this mode of operating. He then passed on to further details relating to the above cases, and the reasons for opening the sac, and stated, that, of the fifty-two instances cited, twenty-nine were femoral, twenty inguinal, and three were umbilical hernia. He further pointed out the conclusion, from an analysis of the foregoing cases, that Petit's operation has proved most successful in the femoral form of hernia. In cases of inguinal hernia, the author limits his incision to a longitudinal division of the skin and fascia over the neck of the sac, of which cut the seat of stricture should be the centre. He then partially incises or scarifies the neck of the sac (if the seat of stricture, as it usually is), so as only partially to divide it, and so that it shall yield to the subsequent application of the taxis. In femoral hernia he considers it very desirable to avoid, as much as possible, interfering with the tumour in conducting the operation, and therefore recommends that a similar proceeding should be adopted—the centre of the perpendicular incision in this case being between the upper part of the tumour and the abdominal surface. Poupart's ligament is thus reached by carrying the finger from above downwards, and the stricture is divided on a director, introduced into the femoral ring. The operation advocated by the author is not considered by him to be so applicable in umbilical hernia, except where it is of small dimensions.

[Mr. Hilton said that this mode of operating had been for some years resorted to at Guy's hospital whenever practicable. He remarked that,]

Upon the whole, perhaps, the chief causes tending to death, in ordinary cases of strangulated hernia, were the structural injury done to the intestine by the continued unsuccessful efforts most strenuously made to return it into the abdomen, and the delay in operating, caused partly by the alarm of the patient, at the pain which might be experienced, and by the natural anxiety of some surgeons to defer the use of the knife, knowing how great was the fatality after the operation for strangulated hernia, when the sac was opened. These two evils might be now fairly met. At the present time, he could assure the patient of an entire freedom from pain, by the influence of anæsthetic agents, and so do away with one of the causes leading to delay, and acting upon the facts so fruitful, and conclusions irresistible, which this paper exhibited, and which the experience at Guy's hospital enabled him to support, the surgeon ought and would be induced to operate early, and thus deprive a necessary operation for the relief of strangulated hernia of a very great portion of its formerly associated dangers. He much doubted if language too strong could be employed in favour of the proceeding which experience and this communication recommended. In cases of strangulated femoral hernia, the operation without opening the sac was usually one of great facility, as the obstruction or stricture was generally caused by the fibres or bands of fascia (propria) crossing, nearly transversely, the front of the neck of the hernial sac, just below Poupart's ligament: when the hernia was small, a short, vertical incision, intersecting the direction of those fibres, would give sufficient space for the completion of the operation; and when the size of the hernia was more considerable, and the depth of the stricture great, he had found that, instead of the inverted ⊥ incision, a single semi-lunar cut, made across the upper third of the tumour, with the convexity of the curve downwards, exposed abundance of room for its easy completion. In strangulated inguinal hernia, the constricting cause being more frequently in the neck of the sac itself, this operation was more difficult, and sometimes unavailing, and he would remark, that the recommendation of the author to incise at several places the external aspect of the almost linear surface of the annular depression or stricture in such cases (so as to enable it to be expanded by the intestinal pressure from within) required extreme care and delicacy on the part of the operator, to avoid wounding the intestines which were pressing outwards and merely covered by the thin peritoneal sac. He doubted whether this operation would be often practicable in umbilical hernia strangulated, for the hernial sac itself was frequently found so firmly adherent to the tendinous margin of the umbilical opening, that it was almost impossible to interpose a director; and further, the constricting cause was oftentimes discovered within the hernial protrusion, quite independent of the neck of the sac, or the structures external to it.

Mr. COULSON mentioned to the Society, as bearing on the subject of the valuable paper just read, an operation which had been recently suggested by a friend of his (Mr. Gay) for strangulated femoral hernia and herniæ generally. The principle of the operation consisted not only in not dividing the sac, but in not interfering with the hernial tumour at all. If a subject be dissected in which there is an unreduced femoral hernia, there will be found on the inner side of the hernia a space, which, for the purpose of description, he would describe to be of a triangular shape, varying in length and breadth, according to the size of the tumour, but seldom less than an inch in length, and a thumb's breadth in width. The apex of this space is at the point where the falciform or upper edge of the saphenous opening crosses the neck of the sac; the outer side is formed by the sac; the inner and upper side by a line drawn from the neck of the sac to the spine of the pubes. In the natural condition of parts this space is of some depth, and when femoral hernia exists the depth is much increased. Now, in this operation it is proposed, taking the spine of the pubes and the tumour as the guides, to cut into this space midway between these marks, feel with the point of the finger for the crescentic edge of the crural opening, and directing Turner's knife (which is both a director and knife) upwards and inwards, divide the stricture. He had seen the operation for strangulated femoral hernia, of large size, performed on this plan on a stout woman, and the rupture reduced within a minute. The advantage of the operation consists, not only in its simplicity, but in its not meddling with the swelling, the contents of which will be in a more or less inflamed condition. The proposer of this operation considers the principle applicable to umbilical and inguinal herniæ, and he (Mr. Coulson) had recently operated on this plan both in cases of umbilical and inguinal hernia. In umbilical hernia the operation is easily applicable, as an incision can be made either along the upper edge of the umbilical opening, or on the sides, and the stricture be divided without interfering with the tumour. In inguinal hernia, however, he (Mr. Coulson) thinks there will be, occasionally, difficulties in applying the principle of this operation, owing to the variation in the seat of stricture and the size of the hernia. He considered the operation highly deserving of notice. It might almost be called a subcutaneous operation, as applied to femoral hernia, the incision not being required to be larger than to admit the point of the finger.

[Mr. Quain stated that his experience led him to agree with Mr. Luke. With respect to Mr. Coulson's observations, he said:]

It appeared in the description of the course of proceeding communicated by Mr. Coulson in his subsequent observations, that though the first incision was made near to, not over the hernia, yet that the deeper incisions—those to relieve the constriction—must have divided every fibre external to the sac; otherwise, indeed, the operation would be ineffectual. The sac thus was laid bare at its upper part; and the essential part, at least, of the operation was identical in principle with that brought under the notice of the Society by Mr. Luke. Moreover, supposing the stricture should happen to be seated in the neck of the sac itself, or that after the division of the structures surrounding it, at a given point, the hernia should continue irreducible (and how often it is so has been shown to night), how, under such circumstances, could the operation be successful without interfering with the sac, and interfering largely too? For these reasons he could not agree with Mr. Coulson's opinion, that by operating in the manner he had described the peritonæal sac was not meddled with.

Medical Gazette, March 10, 1848, *p.* 425.

[An able paper upon this subject appears in the Monthly Journal for May, 1848, p. 769, from the pen of Dr. Pirrie, Regius Professor of Surgery at Marischal College. The Dr., while approving of Petit's operation on the whole, pronounces it quite unsuitable when the stricture is formed by the sac or within it, and this condition he believes of frequent occurrence.]

91.—*On the Use of the Taxis in Strangulated Hernia.*—By Thomas Hunt, Esq., Herne Bay.—[Being called to a case of inguinal hernia, in a stout boy of two years old, which had been strangulated for a considerable time, and finding that there would be considerable difficulty in performing an operation: as there was no surgical assistance at hand, Mr. Hunt determined upon a resolute attempt at reduction. He says:]

I placed the patient on a table, with a mattress and pillow, of convenient height, on his back, with his legs bent, and the limb of the affected side directed over the other, and taking my seat on a high chair, so as to command the best use of my arms and hands, I commenced steady, gentle, and gradually increasing pressure on all sides of the tumour, and *in an hour and three quarters*, just as my strength was beginning to fail, I had the satisfaction of perceiving an evident decrease in its size, and in a few minutes heard the gurgling noise which preceded its return into the abdomen.

[Another case was that of an old man of 60 with strangulated inguinal hernia.]

The tumour had existed fourteen hours; it filled and distended the scrotum; it was twenty-five inches in circumference, and of course could only be partially covered by both my hands; it was tender, as well as the abdomen; and nausea, quick pulse, and sunken features, proclaimed the urgency of the case. The patient was laid on his back in bed, the muscles relaxed, and placing myself on my knees, supported by a pillow, I compressed the tumour with both hands, as one might squeeze a mop. In half an hour my hands were both paralysed, and no apparent result obtained. I then sent for my assistant, who took my place; meanwhile I supplied myself with O'Beirn's defæcation tube, as the next best resource, if the taxis should fail, and also some tartar-emetic. My assistant was tired in his turn; I resumed my laborious post, and in two hours from the commencement of the pressure, the tumour was evidently softer and smaller. The reduction was soon afterwards accomplished, and the patient had not one bad symptom.

Provincial Medical and Surgical Journal, April 5, 1848, p. 179.

[Mr. Thomas Pope, of Cleobury Mortimer, relates the following case:—

An old woman of 70, who had been the subject of hernia for twenty years, got it strangulated on Tuesday, the 8th of February. Mr. Pope was sent for, and after the taxis, and various other means were tried, he proposed the operation, to which she would not agree.]

"On Saturday," says Mr. Pope, "I was again summoned to her, while I was reading Mr. Hunt's letter, which made so forcible an impression on me, that after re-reading it, I hastened to my patient, persuaded of the true philosophy of Mr. Hunt's reasoning, as it explained to me why I had succeeded in a case which was fresh in my recollection. On reaching the house I found the woman with every symptom aggravated, and the abdomen very tympanitic, and every appearance of the near approach of mortification, which I concluded was inevitable, particularly on hearing of the force employed the day before. The hernia was so exquisitely tender, that I had the greatest difficulty to persuade her to permit me even to touch it; at last I prevailed, and commenced very gently, "not by pushing, and kneading, and thumbing, but by gentle equable compression on all sides of the tumour, the abdominal and psoas muscles being previously relaxed," so as gradually to empty the distended veins; and I was determined to proceed, confident of effecting the return of the contents of the sac, though I had every reason to anticipate mortification, as before observed. After the lapse of an hour and a half she ceased moaning; the sickness and hiccough abated, and the hernia was softer, and soon after I felt a motion in it, and in another hour reduction was effected. I now administered an enema, which went up easily, and remained about five minutes, and returned uncoloured, but before half an hour she had three large fæculent motions, with a considerable discharge of flatus.

Provincial Medical and Surgical Journal, April 5, 1848, *p.* 180.

92.—*Chloroform in a Case of Strangulated Hernia.*—By Dr. J. S. Hughes, Surgeon to the Jervis-street Hospital, Dublin.—[This was a case of strangulated femoral hernia of six days duration, occurring in a woman 42 years of age. The taxis was tried while the patient was under the influence of chloroform, but without success. Dr. Hughes thus relates the further proceedings:]

The taxis having failed, the operation was at once commenced by making a T-shaped incision, the transverse portion of it corresponding to the neck of the hernia, and parallel to Poupart's ligament, the flaps were then dissected back, the superficial fascia was next divided to the same extent as the perpendicular incision, which exposed the fascia propria much thickened beneath, which, being carefully divided on a director, laid bare the hernial sac. The sac was then opened by raising a small portion of it on its lower and anterior surface, so as to exclude any portion of the intestine. An aperture of sufficient size to admit the director was made by the knife, held horizontally, into the elevated portion, after which about half an ounce of straw-coloured serum escaped. The director having been then introduced, the sac was divided on it upwards and downwards. The sac contained intestine only, which was of a dark chocolate colour. Recent adhesions had taken place between the intestine and a portion of the sac, especially about the neck, which having been gently broken up with the finger, the intestine was carefully examined and found in a fit state for returning. The finger was carried up to the crural ring, which felt tight. The patient being now free from the influence of the first application of the chloroform, became very restless, forcibly using the abdominal muscles. Dry retching and straining having ensued, the chloroform was then exhibited a second time as before. The patient became fully insensible after a very few seconds, the vomiting and straining having ceased. When on applying equable pressure on the intestine in the proper direction, it went up with a loud gurgling noise *without the necessity of dividing the stricture.* The ends of two fingers could easily be introduced into the crural ring after the reduction of the intestine. The patient experienced immediate relief after the operation, the vomiting and hiccough disappeared, and in about two hours and a half after the operation, she had two copious evacuations from the bowels.

[Dr. H. thinks that the exhibition of chloroform was of great use in the above case, though it is not the first time that reduction of a hernia has been accomplished after breaking up adhesions, without dividing the stricture.]

Dublin Medical Press, Jan. 5, 1848, *p.* 1.

[Mr. Lafargue relates a case of femoral hernia which had been strangulated for upwards of fifty hours, and which could not be reduced by the taxis, aided as it was by enemata and the application of ice. In consultation it was determined to try chloroform.]

Mr. Parsons poured from twenty to thirty drops on a handkerchief, which he immediately applied to the mouth and nostrils, while I endeavoured to return the strangulated part. The first inhalation—a deep one—was followed by a fit of coughing, as likewise the second—not so deep. At the third, a strong inhalation, which she appeared to aid by pressing with her hands the kerchief to her face, she became instantaneously insensible, and in a few moments, without any difficulty, I reduced the hernia. In fact, after slight pressure, it appeared to dart through the canal into the abdominal cavity like a shot. During the state of insensibility, the patient's eyes were fixed and staring; face rigid and rather flushed; the hands, which before pressed the handkerchief, fell upon the chest motionless, and there was no rigidity of the extremities. Immediately on recovering, (the state of insensibility not lasting more than a minute or two,) the pulse was 90, her face and countenance became natural, and she stated, that though she was conscious of what was going forward around her, she felt no inconvenience, but merely a sensation of something passing into her abdomen, suddenly and violently, without pain.

Lancet, Feb. 19, 1818, *p.* 210.

93.—*On the Operation for Hernia.*—By J. GAY, Esq., Surgeon to the Royal Free Hospital.—[After relating a series of cases of hernia, Mr. Gay says,—]

In all cases of strangulated hernia there is no doubt that the immediate care of the surgeon should be to free the incarcerated bowel. But the ultimate success of this step does not wholly depend upon its being skilfully and promptly effected, but upon certain complications which have been generally too much disregarded; but which are strikingly brought under our notice in the cases now under consideration. Operations for hernia are most frequently required to be performed in persons of advanced life, when the vital powers are, to a certain degree, under the control of tendencies to, if not of acquired, organic disease; and thereby limited in their capacity of restoring to health parts injured by accident or operation. In four individuals the hernial protrusion took place under very similar circumstances; the difference in the length of time during which the strangulation continued was not so great as to constitute an important item in the calculation as to the chances of recovery; the operation was so nearly the same in each case, and was, as far as my memory serves, performed with such equal facility, that its influence towards a favourable or unfavourable result could not be much greater in the one than in the other; and still the results were widely different. The reasons are obvious: in two cases there was valvular disease of the heart; in another, bronchitis; in a third, no perceptible lesion of any other than the parts concerned in the hernia. Hence the importance in such cases of carefully scrutinizing the patient prior to the operation, for the purpose of ascertaining the amount and seat of any organic disease that may coexist; for upon that must the issue, to a very great degree, depend. But this is not the only advantage: a knowledge of these circumstances is eminently necessary to guide the surgeon in the kind of operation which he would select, as well as of the treatment which he would subsequently adopt.

For instance, in the second case, as in the first, the aortic valves, owing to their diseased condition, prevented an adequate supply of blood from passing into the arteries of the greater circulating system; and thereby the powers of restoration, in parts already enfeebled by strangulation, were seriously impaired. Hence the sac and portion of intestine in one case, and the sac in the other, sloughed. But the chances of ultimate recovery differed again in these cases. In the first, after the sloughing both of sac and intestine, there was, in the disposition of the parts, every preparation for, and tendency to, complete recovery; but the systemic powers were unequal to the tedious task. In the second, the sloughing of the sac was immediately followed by death from purulent effusion into the peritoneal cavity. The chances of sloughing were about equal in both cases; but in the one the sac was opened, and free passage for the discharge of the unhealthy secretions permitted, whilst in the other the sac was left unopened, and the secretions took a wrong and mortal course.

From these considerations, then, it appears—

1st. That in cases of hernia (and the remark applies generally to all surgical operations) the success of operations must depend mainly upon the coexisting state of the organs of the body in relation to health or disease.

2nd. That the chances of success depend, in case of coexistent disease in some organ, upon the degree of importance which the affected organ holds, in reference to the maintenance of the vital functions generally. Thus, as in the third case, an affection of the bronchi, although it retarded recovery, appears to have been of less consequence than diseases directly involving the organs of circulation.

3rd. As a rule, probably it might be laid down, that in all cases where organic disease exists, so as to render a severe depression of the vital powers, after the operation, likely to accrue, *the sac should be opened, and a free passage left for discharges, should such an occurrence as sloughing, either of the bowel or sac, take place.*

In operating for hernia, after determining the *seat* of stricture, its division will be much more easily and successfully accomplished, if, instead of cutting down (as books generally direct) on the tumour, the incision *be made on one side, directly over the part where the stricture will have to be divided.*

Lancet, Dec 11, 1847, *p* 623.

94.—*Case of Strangulated Umbilical Hernia Operated Upon after Mr. Gay's Method.*—By G. B. Childs, Esq.—[A very corpulent woman, 35 years of age, was the patient. The hernia was of large size, and had become strangulated during the previous night.]

In the presence of Mr. Coulson, Mr. Childs proceeded to operate, assisted by Mr. Goude and Mr. Clarke, after the vapour of chloroform had been administered, so as to bring the patient fully under its influence. A wound through the integuments and superficial fascia, not more than an inch in length, was made on the right side, just beyond the edge of the hernial mass. The finger was directed through the wound, and after separating some few bands of cellular and other tissues, which feebly obstructed its course, the neck of the sac was reached, at a depth of at least four inches. The umbilical ring forming the stricture was then felt gripping the neck of the sac, to which it was adherent, by means of some strong bands. These were broken down with the point of the finger, but not without some difficulty, owing to the great quantity of fat and consequent depth of the wound. A director was then insinuated between the sac and the ring, guided by the finger, which still remained in the wound, and the stricture divided. After breaking down some further adhesions, the parts were liberated, and the contents of the sac immediately returned. The patient had her usual truss applied at once, and no bad symptoms occurred to prevent her complete recovery.

The usual fatality attending operations for umbilical hernia would, in the prognosis of the present case, have excited grave doubts as to the result, had the old operation been adopted; and Mr. Childs cannot but think that the simplicity of the principle upon which the new operation is based, the little difficulty, in ordinary cases, of practising it, and the lessened probability of its being followed by any severe symptoms, form very decided arguments in its favour.

Lancet, March 18, 1848, *p*. 308.

95.—*Mode of Arresting Bleeding after the Excision of Internal Hæmorrhoids.*—By J. P. Vincent, Esq.—Surgeons have for the most part, been deterred, on account of the bleeding that has often followed, from cutting them off. But it must be remembered, that if there be any coagulum left in the tumour after the incision, it will go on bleeding: and I believe that very generally this is the way by which the bleeding is kept up after the pile has been excised, which may have given rise to the great apprehension of hemorrhage in these operations. I have, with few exceptions, adopted the operation of excising internal piles, and with the precaution and the use of an expedient I have now to mention, I have never been troubled with any serious extent of bleeding. This remedy is simply a solution of sulphate of iron in water; a grain to an ounce seems quite strong enough. If this be injected in small quantity, so that it may be retained after the operation, I believe it will hardly ever fail of preventing bleeding. I consider the advantages of excision over tying to be, that the operation is completed at one suffering, and is almost instantaneously executed. That the wounds being simple, when the membrane is restored to its proper place, there is the better chance of the adhesive process being so far carried out as ultimately to retain the membrane in its place, and prevent the continuation of the protrusion, if straining on the parts can be prevented for three days. Indeed, I have seen the prolapse quite cured by the excision. In either case the operation should be restricted to the mere pile, and not include any part of the membrane around it. I have occasionally, at the instance of patients, tied piles, but have found the pain more severe, and the swelling and soreness in the succeeding days after the operation have produced greater suffering, and the parts have seemed more readily to be protruded by the dejections than after the excision.—*Observations on some parts of Surgical Practice.*

Edinburgh Monthly Journal, (Monthly Retrospect,) March, 1848, *p.* 41.

96.—ON THE TREATMENT OF PROLAPSUS ANI.

By J. P. Vincent, Esq.

Of late I have found such great advantage in employing the sulphate of iron in prolapsed bowel, that the operation may very often be dispensed with, and the patient quite cured merely with the use of this remedy. Very lately I had in the hospital two cases of the worst sort,—the one of twenty years' standing, with a great protrusion and abundance of bleeding piles, who in about three weeks left without any protrusion or bleeding: declaring himself to be in a state of comfort that he had not known for so long a time. The other came from one of the institutions that offer great pretensions in the treatment of this class of cases. He was very bad, having both internal and external piles, and the bowel descending largely and most readily: he was completely relieved in about a month. Other cases of a slighter kind have been set to rights in not much more than a week. The patient should be kept in bed of course, so that there should be every facility for the repose of the bowel; and after it is cleansed out, a small quantity of the injection should be daily thrown up, and retained. If the stomach can take balsams, they seem well adapted for this disease.—*Observations on some parts of Surgical Practice.*

Edinburgh Monthly Journal, (Monthly Retrospect,) March, 1848, *p.* 41.

97.—*Treatment of Piles and Prolapsus Ani.*—By J. TAYLOR, Esq. —[Mr. Taylor treated the following case by the temporary ligature, and the rectum pessary. He says:]

There was complete prolapsus, and on the prolapsed membrane were seen three hæmorrhoids, each about the size of a large grape. Around the base of each tumour I applied, successively, a strong ligature of waxed silk, embracing as much of the subjacent mucous membrane as I possibly could. I held them tightly for about twenty minutes; the ligatures were then removed, and the parts retained. She did not complain much during the operation. The patient was put to bed, and an anodyne administered, and repeated for three successive nights. The bowels were not permitted to act for three days. On the fourth day she took an aperient, which caused some uneasiness during its operation; and she complained of the parts being very sore, but there was no constitutional disturbance. The nurse retained the prolapsus without difficulty, and reported the extrusion to be smaller. The anodyne was repeated every night for a week, and an aperient every third day. On inspection, the hæmorrhoids had then nearly disappeared, and the prolapsus was much smaller; ecchymosis still visible on the ligatured parts, surrounded by a red blush, as if adhesive inflammation were going on. The same measures were persisted in for another week, when the patient was found occupied with her domestic duties, gratified with the success of the treatment, and so greatly improved and delighted, that she said it was not necessary to examine her, as there was nothing to be seen except when at stool, and then only a very small portion was prolapsed, which she could return without difficulty.

Previously to this simple operation, whenever she arose suddenly from her seat, or hastily walked across the room, the parts would protrude with much pain. Walking out of doors was what she had for a considerable time been a stranger to; wherever she went she must ride. Now she can walk a distance of two miles with very trifling inconvenience, and certainly without any protrusion. Still there was some prolapsus on going to stool; for the relief of which she was directed to use the rectum pessary after each motion, and to retain it in the bowel for the space of five or ten minutes. This was found, after a fortnight's trial, to be a valuable auxiliary, as its pressure tended greatly to consolidate the relaxed membrane, and thus to relieve the slight inconvenience which she felt on going to stool.

Lancet, Feb. 5, 1848, *p.* 153.

98.—*Curious Case of Recto-Urethral Fistula.*—By F. F. GIRAUD, Esq., Faversham.—[A man, 59 years of age, had been for some time subject to difficulty in voiding fæces, and found that flatus and fæculent matter passed by the urethra. On examination a stricture was found about three inches up the rectum, and it was supposed that there was a fistulous communication between the rectum and the membranous portion of the urethra. By Sir B. Brodie's advice no treatment was adopted except the daily passage of a rectum bougie. Mr. Giraud says:]

An improvement slowly took place in the state of the rectum, and of late the calibre of the gut has become almost restored to its natural size. The fistulous communication between the rectum and the urethra remains the same, and a few weeks ago an unusual irritation was felt in the urethra, and very soon something alive made its appearance at the orifice; the patient removed it with his finger. On placing it in a wine glass half filled with warm water, the movements it exhibited shewed great activity, and by the alternate contraction and dilatation of its rings, and the protrusion of a vaginated proboscis, it soon arrived at the edge of the glass. It appears to be a species of Echinorhyncus.

Questions may arise, whether a similar creature to this might have occasioned the fistulous opening between the rectum and the urethra, and whether the stricture in the gut which is now nearly at an end, might not have originated from the local irritation.

Provincial Medical and Surgical Journal, Feb. 23, 1848, *p.* 92

99.—*On Irritable Ulcer of the Rectum.*—By BRANSBY COOPER, Esq., F.R.S., &c.—Mr. B. Cooper, in a lecture in the Medical Gazette, describes very clearly this painful form of disease—painful to the patient, and sometimes not less so by its obstinacy to the practitioner. Speaking of irritable ulcer, he says,—

Such a condition of ulcer not unfrequently attacks the rectum, under the form of a narrow elongated fissure running along one of the folds of the mucous membrane, near to the orifice of the anus. The edges of the fissure are free from any callosity, and it bears a strong resemblance to the cracks which frequently affect the lips.

The most usual situation for the ulcer, as far as my experience goes, is at the posterior aspect of the rectum in the mesial line, although I have sometimes found it on the side of the bowel. The ulcer may involve merely the edge of the verge of the anus, or extend a considerable way up the intestine, but may always be detected by passing the finger into the rectum, when the nature of the sore is readily appreciated by the extreme pain which the patient experiences directly the finger comes in contact with the fissure.

The symptoms of the disease are highly characteristic; a burning pain is experienced during the act of defæcation, which continues for a considerable time after each evacuation. During the intervals the patient enjoys comparative ease, but still occasionally suffers from heat and lancinating pain about the anus, but nothing to be compared to the agony produced by the passage of the fæces over the ulcerated surface and through the sphincter, and which is commonly more or less in a state of spasmodic contraction.

The bowels are in these cases generally constipated; now this symptom involves the question as to whether this constipation is not produced rather by the unwillingness of the patient to evacuate his bowels than from any derangement of function? The best, and, indeed, the only positive evidence of the disease, is the introduction of the finger into the rectum, which, on being withdrawn, will be marked with a streak of blood, and lead to the discovery of the size and position of the ulcer.

If the disease be allowed to remain for any considerable time, the patient's health becomes seriously affected by the constant suffering, and from the countenance one might suppose that the disease was of a malignant character. The digestive functions become deranged; the appetite fails; the slightest exertion, such as the act of coughing or blowing the nose, is sufficient to excite the pain; and any excess of diet is sure to aggravate all the symptoms.

Although this distressing affection will not yield to the remedies recommended in irritable ulcers in other parts of the body, its treatment is fortunately very simple. It consists in passing the forefinger of the left hand up to the ulcer, and directing along it a straight probe-pointed bistoury beyond the very extremity of the fissure; then, turning the cutting edge towards the sore, you divide the ulcerated surface, as well as the fibres of the sphincter muscle, which are connected to its submucous aspects.

This procedure is usually sufficient; but if there be any reason to believe that suppuration has taken place in the cellular membrane beneath, the incision should be continued so as to divide the verge of the anus, and thus insure a free exit for the matter.

In the after-treatment, I strongly recommend (when the patient has recovered the effects of the operation) that he be directed to acquire the habit of evacuating the bowels at bed-time, instead of in the morning, so as to secure the six or eight hours subsequent recumbent posture, and the certain receding of the rectum into the pelvis, which does not occur in a diseased state of this bowel if the patient follows his daily avocations immediately after the act of defæcation. This disease I have certainly found more frequent in females than in males, and to prevail rather in the higher than in the humbler classes of life.

It is to Mr. Copeland that I am indebted for a knowledge of this disease, as well as for the operation, which I believe I may describe as almost infallible as a means of cure.

Lancet, Nov. 27, 1847, *p.* 576.

100.—*Treatment of the Abscesses which precede Fistula in Ano.*—By J. P. Vincent, Esq.—I have had many opportunities of treating those previous abscesses from which fistulæ in ano are formed. In that mass of adipose substance filling up the ischio-coccygeal space, the patient's notice is perhaps drawn to a deep tumour, just differing in substance enough to be clearly distinguishable from the surrounding structure, of a doughy consistence, little sensible, and not at all rising to the level of the surface. This is, I apprehend, the first abscess in its earliest state, which, if allowed to go on, will end in the genuine fistula in ano. I have had such cases in the hospital, and have no doubt that this is the fact, as I have compared these sort of swellings with other presentations in a more advanced stage in the formation of fistulæ. The practice to be adopted is unhesitatingly pointed out: this lumpy mass is to be transfixed; and this I have done the very first moment the case has been presented to me. I plunge a knife down to the very centre of the mass, and then I have found a small quantity of pus come out; and upon passing my finger down (and the opening should always be large enough to admit this part), I have found in the centre of the mass a small cavity of the peculiar pulpy feel that is familiar to surgeons as the interior of an abscess. This prompt measure stops all further progress of the abscess, which otherwise would lead its way either to the rectum or to the surface, and terminate in fistula. The course of these abscesses, when opened, is to close, and finally heal; but the surgeon must not expect that they will heal with the readiness of ordinary active abscesses.

Medical Gazette, March 3, 1848, *p.* 388.

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URINARY ORGANS.

101.—ON LITHOTOMY, AS PERFORMED WITH A RECTANGULAR STAFF.

By Professor Buchanan, Glasgow.

[Dr. Buchanan has been engaged in an attempt to modify the operation of lithotomy, originating in an endeavour to obviate the difficulties of Dupuytren's bilateral operation. In order to understand the object of Dr. B's attempts, we must remember the principal steps of that operation.]

The external incision extends across the perineum in the form of a curve, of which the concavity looks backward, the summit intersecting the raphe or middle line of the perineum, at the distance of from six to nine lines from the anus, while the extremities of it are from eight to ten lines distant from the middle line on either side.

The summit or middle of the curve, corresponds to the central tendon of the perineum, or tendinous junction of the sphincter ani with the other perineal muscles. The muscular fibres attached to this tendon being divided, the membranous part of the urethra is exposed and opened. The point of the double lithotome is then introduced into the groove of the staff and passed onward into the urinary bladder, where, the blades of the lithotome being expanded, it is drawn outward and downward, dividing the prostate gland, and the more external musular parts, in its passage towards the extremities of the first incision.

[The difficulty is to reach the membranous part of the urethra from the middle line of the perineum, without injury to the bulb above or the rectum below. It is needless to follow Dr. Buchanan in his account of his experiments to overcome this difficulty; suffice it to say that they ultimately led him to use a staff *bent at a right angle three inches from the point*, by which he was enabled to depress the rectum from the track of the wound. He says,]

When this staff is introduced into the bladder, the lower or grooved branch of it lies parallel to the rectum, the angle resting on the farthest extremity of the membranous, or rather the commencement of the prostatic part of the urethra; so that, when the knife is plunged into the groove of the staff, the membranous part of the canal escapes all injury,—the incision commencing at the apex of the prostate gland, and being continued along the side of it to the bladder.

This new staff, therefore, while it possessed all the advantages of the former one, had the additional recommendation of doing less violence to the urethra. It enabled me also, to effect several important alterations in the steps of the operation, and to simplify the apparatus for performing it.

The point at which the knife penetrated into the groove of the staff being now much lower, or immediately above the anal orifice, the direction of the external incisions was somewhat changed. They were, at first, quite horizontal, but acquired an inclination downwards as they extended to the outside, towards the ischiatic tuberosities. Further, as the knife was at once plunged into the substance of the prostate gland dividing first the one side and then the other, at the same time that it made the external incisons, there was clearly no longer any use for the prostate knife, which I was thus enabled to dispense with. I did not, however, at first perceive this advantage, and intended to have used the prostate knife in case second, narrated below, had I not been prevented from doing so by an accident.

Last of all, as I found that a moderate incision of one side of the prostate and perineum was sufficient to extract a stone of ordinary dimensions, I abandoned the bilateral section in all ordinary circumstances, and had only recourse to it in certain cases, to be hereafter specified. It must not be supposed, however, that in thus abandoning the double section of the perineum and prostate, it was at the sacrifice of any of the advantages which Dupuytren has justly enumerated as belonging to his bilateral operation; for, if these advantages be analysed, it will be found that they depend on two causes; and that of these, that which here remains untouched is the most important and generally applicable,—the direct and short path of access to the bladder; while the other source of advantage,—the double section of the perineum and prostate,—is only important in particular circumstances of rare occurrence.

As this new staff was first constructed, it had an inferior groove, but I found this attended with several disadvantages; for, whether the groove were made deep or shallow, and whether the knife employed were spear-pointed or with a broad shoulder, and whether it had a single or double edge, it was apt, if carried deep into the groove of the staff beyond the verumontanum, to injure the seminal duct and vesicles, and the resulting incisions were often ragged and irregular. I accordingly abandoned this inferior groove, and tried grooves of a different kind—as, a lateral groove, a groove looking outward and downward, and a spiral groove, commencing below, and twining gradually round to the side, as it passed inwards. The result of all these trials, was to make me finally prefer a lateral groove having a posterior opening, so that the point of the knife might pass directly into it from the perineum.

By the use of this instrument, a new route, previously inaccessible, is opened up into the urinary bladder. The knife passes inwards, in a straight line parallel to the anterior surface of the rectum. If we suppose a triangle formed, of which the apex of the prostate is the superior angle, the anterior coats of the rectum and the membranous part of the urethra the sides, and the fore part of the sphincter ani the base, then will the line in which the knife penetrates to the apex of the prostate, be very nearly the line dividing the above triangle into two equal parts. The tissues divided by the incision are the skin, the anterior fibres of the sphincter ani, the superficial perineal fascia, and the most anterior fibres of the levator ani, where they meet under the urethra on the fore part of the rectum. The descending fibres of the levator ani, which are inserted into the side of the rectum, and which are divided in the lateral operation, remain here uninjured. It is chiefly at the outer and lower side of the prostate gland that the muscular mass above-defined is incised; for the apex of the gland lies so immediately over the verge of the anus, that the knife at once plunges into the substance of the gland. There is, therefore, not the least danger of wounding the rectum; for, not only is it defended by the lower side of the groove of the staff, but the mass of the gland, progressively increasing in thickness as the knife goes inwards, intervenes; and, more externally, there is a layer of muscular substance of considerable depth. It is also obvious that the knife is far distant from all the large bloodvessels of the perineum.

[To all operations in which we penetrate into the bladder from the middle line of the perineum, Dr. Buchanan would give the name of *mesial*, as distinguishing them from the *lateral* operations. In the mesial operations again, we may cut both sides of the perineum and prostate, or only one; hence we have the *mesial bilateral* and the *mesial unilateral* operations. In the majority of cases the latter operation is preferable; it is thus described:—]

The only instruments necessary for this operation are the rectangular staff, which has been already described; and the knife, which ought to have a cutting edge as long as the groove of the staff, with the back straight, and the blade of uniform breadth as far as the point, which should be shaped like that of a scalpel, but fitted to stab as well as cut.

The operator having introduced the staff into the bladder, which is done without difficulty, places the forefinger of his left hand in the rectum, and feels for the horizontal branch of the staff lying over the prostate. He then moves the staff backwards and forwards, till he feels the prominent angle, which guides him in making the orifice of the groove project in the perineum, at the anterior verge of the anus; or just at that point of the raphe, where the skin begins to lose its proper characters, and gradually assume those of mucous membrane. Keeping the staff steady in this position, by means of the forefinger placed within the rectum, and the thumb pressing on it externally so as to indicate the orifice of the groove, he commits the staff to an assistant, with directions to keep it in the same position, and press downward with a moderate degree of firmness, of which, from the instrument resting upon his own fingers, he is enabled to judge. He now takes the knife into his right hand, holding it in what is technically named the third position, with the palm of the hand looking obliquely upward, while the blade of the knife is horizontal, and the edge turned to the left side. He penetrates through the skin and other tissues, till he feels that the point of the knife is within the groove, when he carries it directly onward, till it is arrested at the termination of the groove. As he has now penetrated into the bladder, there is usually a little urine seen to ooze out along the blade of the knife. He finishes the cutting part of the operation, by withdrawing the knife, so as to cut first three quarters of an inch outwards and downwards, in the direction of the fore part of the tuberosity of the ischium, and thereafter three-eighths of an inch almost directly downwards.

The total extent of the external incision is thus one inch and an eighth; but, owing to the vicinity of the anal aperture, and the cut parts subsiding in that direction, the incision is quite sufficiently large to permit a stone of considerable size to be easily extracted; for full advantage is taken of the natural apertures in enlarging the wound, the aperture of the bladder coinciding with it internally, and that of the rectum externally.

[Without moving the staff, the finger is now to be passed above its horizontal branch into the bladder, and the size of the stone ascertained; if it be small, it may be extracted, if larger, the opening may be dilated, or, if dilatation will not be sufficient, a more ample incision will be required.]

The question as to the direction of the additional incision, is an important one. It may be thought that, as the wound of the left side of the prostate is of less size than is usually made in the common lateral operation, it would be advisable to cut the prostate more extensively on that side. It seems to me, however, that there would, in this way, be considerable risk of infiltration of urine behind the fibres of the levator ani muscle, which are less freely divided than in the lateral operation. I would, therefore, prefer dividing the right side of the prostate, which is easily done, by shifting the staff a little to the left, passing the knife on the right side of the staff, and guiding the point of it with the finger, along the top of the horizontal branch, into the bladder. The staff being now replaced, and the knife being held in the left hand, while the finger of the right rests on the point of it within the bladder, the blade is made to advance with a sawing motion towards the right, keeping parallel to itself, so as not to make the external incision unnecessarily large. A narrow probe-pointed bistoury may also be employed to divide the prostate and perineum on the right side. After this incision, I should be disposed to try dilatation again, if there was any hope of succeeding in that way, rather than cut the prostate more extensively on either side. If, however, the stone be of very large size, then all risks must be run, and the wound of the prostate enlarged on one or on both sides, so as to permit its extraction.

In extracting the stone, it is best to introduce the forceps, and lay hold of it before removing the staff, which serves as a guide to the forceps, and prevents the neck of the bladder from receding into the pelvis before the stone be secured. Particular attention should also be paid to the position of the patient. The upper part of the pelvis should be raised by a pillow placed under the loins, so as to make the lower brim look obliquely downward: the stone thus descends toward the wound, instead of rolling back into the body of the bladder, as when the patient lies flat upon his back, with the whole pelvis raised. It is also, according to my views, right to have very little urine in the bladder at the time of the operation, so that the cavity may be contracted, and the stone may not be covered by any folds of the relaxed coats of the bladder.

The above operation may be said to be just one half of the bilateral, and its less degree of severity is its recommendation. There are, however, certain cases in which the bilateral operation is to be preferred. Such cases are of two kinds, first, the cases alluded to above, of adults having a large stone; and, second, the cases of very young children, whatever may be the size of the stone; for, in such young subjects, from the small size of the parts to be cut, a wound of one side of the prostate, capable of admitting freely the finger of a full-grown man, must, of necessity, be relatively large. In cases of the first kind, I would perform the first half of the operation exactly in the way described above; and, after feeling the size of the stone with the finger, I would cut the opposite side of the prostate and perineum to such an extent as might be required. The incision of the two sides of the prostate is thus made symmetrically, while the external incision is larger on the left side than on the right. In young children, again, I would prefer making both the internal and the external incisions perfectly symmetrical, and would limit the extent of the latter, on each side of the middle line, to about half an inch; for, from the subsidence of the anterior coats of the rectum, the opening thus made is as ample as can be required. The inclination of the internal incisions downwards is so slight, that on the healing of the wound the cicatrice appears a straight line. This is exactly the operation that was performed in case second, narrated below—only in that operation a staff with an inferior groove was employed, of which I was not then fully aware of the disadvantages. I would now prefer making use of a staff with a lateral groove, and after penetrating into the bladder and left side of the prostate and perineum with the lithotomy knife, using a probe-pointed bistoury to make the incision on the right side.

The prostate, in both these operations, is found to be cut in the very same direction as is commonly recommended in the lateral operation—outward and a little backward from the apex, or in a direction parallel to that of the vesiculæ seminales. This coincidence is not a little remarkable, considering the total difference of the mechanism by which the section is effected. In the lateral operation, the lower half of the prostate which is to be cut lies horizontally, with the staff not pressing upon but a little raised from it, the upper half of the gland being hooked up under the arch of the pubis. Now, in cutting the prostate, the handle of the knife is depressed and held to the left side, as the point of it is pushed along the groove of the staff: the consequence is, that the section is intermediate between the vertical section which would be made if the edge of the knife were held straight downward, and the horizontal section which would result from holding it, on the level of the gland, to the left side. In the operations here described, again, the blade of the knife, while it cuts the prostate, is held almost horizontally, and did the gland itself lie in the horizontal plane, the section would be directly outward; but from the lower half of the gland not lying horizontally, but being pressed obliquely downward by the staff resting on the middle of it, and thus presenting on each side a slooping surface to the edge of the knife, the incision comes to be made in exactly the same direction as before. But though the direction is the same, the sections themselves are somewhat different. In the lateral section, the substance of the gland and the fibrous covering investing it are incised, exactly to the same extent; but, in the operations here under consideration it is only the anterior half of the gland that is cut through and through, for the section of the posterior half does not go through the whole depth of its substance, and spares the fibrous indusium and adjacent cellular membrane. This circumstance seems to me important, both as guarding against infiltration, and facilitating dilatation, should it be required.

There is one precaution, with respect to the use of the staff, which must not be passed over. On whatever point of the urethra, situated beyond the bulb, the angle of the staff is made to rest, that point is forced outward before it, and made to project in the perineum. Now, the point at which the angle ought to be made to rest is the apex of the prostate: it may rest a little farther onward, without disadvantage; but if it goes as far as the verumontanum, the ejaculatory duct will be injured; and if it be placed farther inward still, the bladder will be opened, through the substance of the prostate, without entering the urethra at all. This happened to me, more than once, in operating on the dead subject, before I understood the reason of it. I found that, without intending it, I had performed exactly the Celsian operation, forcing down the prostate before the angle of the staff, just as it is forced down before the stone in cutting upon the gripe. It is, therefore, an important rule, after introducing the staff, to feel that the body of the prostate intervenes between the finger in the rectum and the horizontal branch of the staff.

In the first place, I would say, that the mesial operations are more direct, and more easy and rapid of performance. The common object of all these operations is to reach the apex of the prostate gland, in order to incise it. Now, I would ask, if this is not done in the most direct and natural way in the operations described above? The point of the prostate is not above two lines distant from the posterior extremity of the raphe of the perineum; and by merely piercing the skin and fibres of the sphincter muscle, the knife comes immediately into contact with it, and, entering the groove of the staff, cuts one side of the gland as it goes along into the bladder. In the lateral operation the prostate is also cut; but by how circuitous a route is the knife made to penetrate to the apex of the gland! In the first place, an incision, from two to three inches in length, is made along the side of the perineum; but this incision does not reach the apex of the prostate, which is almost an inch distant from the nearest part of it; so that after a second incision, dividing the fibres of the levator ani muscle, the knife is carried about an inch inward out of sight, being hid behind the skin and the anterior sac of the rectum, and then it reaches not the apex of the prostate, but the membranous part of the urethra, which it is quite unnecessary to cut at all; and, after cutting it, the knife at length arrives at the apex of the prostate, which, it has been seen, might have been reached by travelling just two lines from the surface of the skin. This is much the same as if a person in going into his own house, instead of opening the door to get into the passage behind, were to make a breach in the wall to the right hand, and, getting into the adjoining apartment, were to make his way thence through the intervening partition, taking care, however, to penetrate through the partition near the roof, so that he might descend into the passage from above.

The lateral operation was obviously devised under the idea, that the rectum presented an insuperable obstacle to penetrating into the bladder directly from the middle of the perineum. The operator is, therefore, made to travel round the obstacle from the left, and get in behind it; in Dupuytren's operation, again, he ascends over the top of it; while, in the operations here described, the obstacle being pressed out of the way, he passes straight forwards into the bladder.

In the second place, The lateral operation is unnecessarily severe. This is chiefly owing to the external incision being so far distant from the neck of the bladder; for it is only by making that incision of large size, that the finger and instruments can be introduced so deep, whence the great disproportion between the external and the internal incisions, although the latter is large enough to allow the passage of the stone. The wound of the membranous part of the urethra is also unnecessary, as already mentioned.

In the third place, There is more danger of hemorrhage in the lateral operation; for as the two first incisions are nearly parallel to the great artery supplying the perineum, and sending its branches transversely inwards for that purpose, they must run almost at right angles to these branches, and are therefore in the direction most likely to do them injury. In the other operations again, the incision is far out of the course of all bloodvessels of importance.

Fourthly. The rectum, notwithstanding the vicinity of the incision to it, is less likely to be injured in the mesial operation than in the lateral; the reasons for which I have already endeavoured to explain.

Lastly, There seems to me to be more risk of deep-seated infiltration of urine in the lateral, than in the mesial operations. This is a question that can only be decided by experience; but the size of the wound of the prostate, and the extensive division of the fibres of the levator ani muscle, seem likely to occasion that result.

Monthly Journal, Feb., 1848, *p*. 556.

102.—CASE OF SACCULATED OR ENCYSTED CALCULUS.

By Professor MILLER.

[The patient was sixty years old, and required a good deal of palliative treatment before he was in a fit state to be cut.

The lateral operation was performed, and a stone extracted, which, by its shape, indicated the existence of another. Professor Miller says:—]

Forceps, reintroduced, found nothing; but the Searcher soon detected a second calculus. Again using the forceps, sometimes as a sound, and sometimes as forceps, I could make no seizure; often coming in contact with the stone, but never being able to include it in my grasp. I changed the forceps once and again, using different sizes and forms; but with a like want of success. At length, fearful of the patient becoming exhausted, and anxious that he should not suffer harm by unnecessary protraction of the operation, if that could possibly be avoided, I rose, and requested my colleague, Dr. Duncan, then kindly assisting me, to take my place, hopeful that a fresh hand and head might prove successful. To my urgency he assented; but, after skilful and patient use of the instrument, the result was no better than before. The stone could be felt (because impinged upon), but not laid hold of. We became quite satisfied that it was firmly grasped, and protected by the bladder; either sacculated or encysted—we could not tell which; for it was far from the point of the finger, and could be reached only by the instruments introduced. Dr. Duncan, Dr. Dunsmure, and others around, strongly urged me to cease from further extractive efforts; and to make the case one "a deux temps"—a form of operation I had hoped never to see, far less to be personally engaged in. To this proposal I reluctantly gave my assent; and, sitting down, introduced the canula into the wound, with a view to the patient being forthwith removed to bed. The tube I employ happens to be larger and longer than that ordinarily used; and, in pushing it home, its end struck so heavily and plainly on the stone, that it engendered within me a desire for a renewed attempt at extraction, so strong as to be quite irresistible. Accordingly I withdrew the tube, and resumed the forceps. I got hold of the stone; but, plainly, soft parts were included in the instrument's grasp. Aware of this, I held very gently, and endeavoured to bring all down to within the reach of my finger, in order that I might thereby detach the soft parts and retain the stone. Just as I thought I had succeeded, I failed; the stone slipped, and went back again to its former obscure abode. Fortunately, however, I at once obtained a second seizure; and holding the instrument more firmly than before, I succeeded with the point of my left forefinger in detaching the soft parts from the stone, pushing them backwards, first on one side and then on the other, until I could feel the blades of the forceps in contact with the hard stone; and then, in the ordinary way, extraction was soon completed. The patient had been about twenty minutes on the table; but did not seem greatly exhausted. There was no hemorrhage. The large-sized tube, already mentioned, was secured in the wound.

[For the first fortnight he did remarkably well: but at that time feverish symptoms set in, and shortly afterwards hiccough, purging, and collapse; and the patient died in rather less than a month after the operation.

At the post-mortem examination it was found that]

The position and extent of the prostatic wound were quite as they should have been; only there had been little or no progress towards healing. The cavity of the bladder was contracted to a very small size, and presented such structural characters as are usually observed in cases of calculus which have not undergone operation; viz., villous thickening of the mucous lining, hypertrophy of all the coats, fasciculation, and sacculation. There was no trace of injury, or of untoward inflammatory action; no membranous exudation, no ulcer, no slough. And, in this changed state of the organ, it did not surprise us to find no distinct evidence of where the troublesome calculus had been lodged.

My chief object in narrating this case to the Society, is to direct attention to the fact, that the mode of extraction applied to the incarcerated stone did not cause serious structural injury, if any, to the soft parts implicated; and that, therefore, a like procedure may be adopted in other cases of similar complexity, with a good prospect of success and safety. I do not, of course, mean that this mode of treatment is advisable in all cases of encysted calculus. There are cases in which the stone and sac are easily within reach of the finger, and where detachment and dislodgement can consequently be effected without the use of forceps—by the finger and scoop, most probably; aided, if need be, by the probe-pointed bistoury. There are also cases in which the stone is so firmly lodged, and the part projecting from the narrow neck of the sac is so very small, that amplification of the space, whereby the stone is expected to make its exit, must be made by some cutting instrument, if extraction be seriously contemplated. The mode now spoken of, I conceive to be applicable to those cases in which the stone and cyst are beyond the reach of the finger, and in which the stone is not so tightly embraced by the cyst as to prevent detachment by means of a probe or finger—in which, in short, the use of cutting instruments, applied to the retaining cyst, is not essential to the stone's liberation.

The case of Doull seems to show satisfactorily, that an incarcerated stone may be seized firmly, yet gently, along with its investing soft parts; that all may be brought down to the prostatic wound, within reach of the finger; that by the finger's point and nail, the soft parts may be detached and reflected, while the stone is not let go; that the stone, cleared, in whole or in greater part, may then be readily extracted; and that all this may be effected without inflicting untoward injury on the vesical coats. It is not unimportant to observe, however, that the forceps employed were Liston's; flat in the blades, and in their grasping surfaces covered with calico, instead of being armed there with projecting teeth. The calico, in such circumstances, at once affords a sure hold, and avoids the risk of vesical injury.

The case further marks an important fact, viz., that the presence of two or more excavated and smooth surfaces on a vesical calculus, does not necessarily prove the existence of more than one other stone; inasmuch as, if one stone be fixed and projecting, the other, loose, and then shifting, may, at different times, present different surfaces for attrition.

Monthly Journal, Feb. 1848, *p.* 574.

[After Professor Miller had read his case,]

Dr. Newbigging related the history of a case of encysted stone in the bladder, which had occurred, many years ago, in the practice of Sir William Newbigging. A man, thirty-eight years of age, underwent the operation of lithotomy. On seizing the stone with the forceps, the resistance to its extraction was such as to induce the belief that the opening in the prostate was too small, and this was accordingly dilated as far as was deemed safe. The resistance, however, still continuing, the finger of the left hand was introduced along with the forceps, when it was ascertained that part of the stone was imbedded in a sac, occasioned by the contraction of a portion of the bladder forming a ring around the calculus, which retained and prevented the stone being removed. While the forceps were made to maintain their hold, the ring, which had formed a deep fissure in the stone, was gradually, although somewhat forcibly, dilated by the finger; and, so soon as this was accomplished, the final extraction of the calculus was effected. Notwithstanding the manipulation, and the large dimensions of the stone, the patient recovered in the usual time, without one unfavourable symptom. The calculus is in the collection of the Royal College of Surgeons of Edinburgh.

Monthly Journal, March 1848 *p.* 690.

103.—*Dry Cupping in Retention of Urine.*—M. VANDENBROECK, principal physician at Mons, informs the Society of Medicine at Anvers, that for more than twenty years he has replaced the use of the catheter in both sexes by the application of large cupping glasses to the superior and internal part of the thigh. In nine cases out of every twelve, the emission of urine, says he, was made at the end of some seconds. He does not assert that this has any effect in mechanical retention of urine.

Dublin Medical Press, March 1, 1848, *p.* 137.

104.—ON THE TREATMENT OF SPERMATORRHŒA.

By M. LALLEMAND.

In the *treatment* of this affection, M. Lallemand observes, it is more important that our attention should be directed to the present condition of the spermatic organs, than to the original cause producing this; and there can be no question that, in many cases, until this great source of irritation be removed, all the efforts of the practitioner and resolutions of the patient will be in vain. To the chapter which directs the suitable treatment, when this diseased condition arises from irritation occurring in the vicinity, we need not advert; seeing that the remedies employed against ascarides, eruptions or fissures at the margin of the anus, diseased conditions of the prepuce, stricture of the urethra, constipation, &c., are those in ordinary use.

Although it is a common but pernicious error to suppose that spermatorrhœa generally arises from an original debility or atonic condition of the genital organs, yet such cases are occasionally met with, "occurring especially in such as have suffered during infancy from an incontinence of urine, in those whose genital organs are not perfectly developed, or whose temperaments are markedly lymphatic." In such subjects we find the pollutions increasing during mild and damp weather, and diminishing under the influence of bracing winds. Tonics are obviously here indicated: and M. Lallemand has derived much advantage from the transmission of galvanic shocks through the penis and perineum; while he has seen nothing but mischief result from the use of cantharides and phosphorus. He thinks well of the ergot of rye, given in doses of 4 to 20 grains night and morning. Cold bathing has been far too indiscriminately resorted to in spermatorrhœa. It is more especially useful in masturbation and venereal excess, but always proves injurious when, as is usual in the case of diurnal pollution, the great debility prevents the production of a sufficient reaction. Warm, aromatic baths are in such cases very useful; especially when incontinence of urine existed during childhood. Cold applied in a more local manner, as by lotions or the douche, and followed by active friction, is of good service. In well-marked cases, the ferruginous waters, due attention being paid to the condition of the digestive organs, are useful; and although all such medicinal substances, as are given for the especial purpose of exciting the genital organs in impotence from debility, are generally injurious in their operation, yet, when there is an abnormal sensibility of the genito-urinary apparatus, the balsamic remedies, as copaiba, turpentine, &c, given in small doses, sometimes prove of service in allaying it.

Occasionally, seminal discharges arise from the abnormal nervous susceptibility of the genital organs, the least touch or friction inducing peculiar sensations or emission. Great irritation may likewise prevail in the urethra, without local inflammation at the orifice, in the course of the cord, and about the neck of the bladder. These cases occur in irritable subjects, and are best met by narcotics and sedatives given cautiously however at first. In such instances, five- or six-grain doses of camphor often diminish the irritative erections. The introduction every few days of a moderate-sized gum-elastic catheter, which is to be allowed to remain in the urethra for an hour or more, although at first productive of increased suffering, eventually gives much relief by blunting the morbid sensibility of the canal. To produce the full effect of this means, however, more time is required than many patients are willing to devote to it, and in such cases acupuncture of the perineum may be advantageously substituted; this being a means of treatment which M. Lallemand considers has fallen unjustly into disuse. Pollutions maintained by the influence of acquired habit are advantageously treated by it and catheterism.

As we have already seen, the great bulk of cases of spermatorrhœa are connected with a state of irritation of the spermatic organs, varying in degree from simple excitement to actual inflammation. In the treatment of such, M. Lallemand thinks that we have injudiciously departed from the advice of Hippocrates, by substituting cold for tepid baths. His remarks, too, upon the advantages of a milk diet and light regimen, are excellent;—the stomach, however, owing to its usually irritable condition, requires a variety of modifications of diet. Wine, forbidden by Hippocrates, is usually abandoned voluntarily (as is generally beer also) by these patients, owing to their experience of its ill-effects in the aggravation of all their sufferings. They are unanimous in their statements upon this point. All exercise of the organs by coitus when possible, or by the excitement of erotic ideas, must be abandoned, until after convalescence has become firmly established. In the chronic inflammatory state of the orifices of the ducts and the adjacent portion of the urethra, which is the essential characteristic of the form of the disease we are now considering, and the relaxed condition of the parts consequent upon its prevalence, *cauterization* with the nitrate of silver is especially indicated; and to M. Lallemand are we indebted, if not for its first actual application to these cases, (Sir Everard Home having previously so employed it,) at any rate for the far more important service of having perseveringly investigated its claims, and established its right to be considered as the means *par excellence* best calculated to dissipate lingering morbid action, and restore lost tone. He reasonably complains of the conduct of those who have chosen to adopt this part of his practice, without accompanying it with the precautions he deems requisite; and especially enforces the allowing a sufficient interval to elapse after the first application, before again having recourse to it—three or four weeks at least. In the majority of cases a single cauterization will suffice, and at most two; though in some few instances more may be required. We need not enter upon a description of the mode of performing the operation, or of the instrument employed by M. Lallemand (of which Mr. M'Dougal proposes a modification), these having been sufficiently made known in the writings of Mr. Curling, Mr. Phillips, and others.

M. Brâchet related to the Academy of Medicine last year (Bulletin, tom. x., p. 650) some cases of aggravated spermatorrhœa, which he cured by means of a bandage applied to the perineum for several weeks. We do not know that this success has been confirmed by other practitioners; but in certain cases,—as where the patient refuses to submit to cauterization, or the canal is in too irritable a state to admit of its performance, or the practitioner not confident in his dexterity,—the plan would certainly seem worthy of a further trial.

Convalescence, in all but simple and recent cases, is of a slow growth, relapse being, by the force of habit, of such easy occurrence. Hygienic precautions require to be rigidly enforced long after their apparent necessity has ceased. When the health has become sufficiently reestablished and natural desire rekindled, it is highly desirable that the sexual organs should be moderately exercised, both for the prevention of the reacquisition of depraved habits, and for the imparting additional vigour and tone to them. But advice of this kind must not be lightly given, inasmuch as we are not justified in prematurely recommending a matrimonial union for the mere chance of benefiting the patient. Any such experimental proceeding of this kind would be a gross injustice to the wife, and might entail despair and disappointment upon the husband. Renovated powers, on the other hand, are apt to be used incautiously; and indeed what would be abstemiousness in the robust becomes an excess in those whose genital organs have been disordered; and this may easily lead to the reproduction of the spermatorrhœa.

British and Foreign Medico-Chirurgical Review, Jan , 1848, *p.* 44.

SYPHILITIC AFFECTIONS.

105.—ON URETHRAL CHANCRE

By M. Ricord.

[When secondary symptoms appear to follow blennorrhagia, this virulent blennorrhagia as it is called, is the result of a urethral chancre; this M. Ricord has proved by observation both on the living and dead. He says:—]

A urethral chancre in the balanic region is very common; in many cases you need but hold the lips of the meatus slightly apart to see it very plainly. This fact no one denies .Now this chancre may extend backwards in such a way that its anterior margin may be perfectly apparent, whilst its posterior limit may be entirely hidden to the eye, and this often takes place in cases which, in other respects, do not admit of the slightest doubt. It is plain, then, that this posterior limit escapes our observation; but is this a reason for denying its existence? This chancrous ulceration must of course end somewhere or other behind the point which comes under the cognizance of your eye. But why should the chancre not just as well *begin* as *end* in parts which you cannot see? Is not this a fair deduction? All that part of the canal that you can open to view may be healthy, whilst the posterior division may be affected with chancres.

[M. Ricord uses the abortive treatment in these cases, and remarks upon this subject,]

My doctrine runs thus: a chancre destroyed by caustic within four days of improper intercourse may entirely disappear, without having time to contaminate the system; with this proviso, however, that the induration of the base have not commenced. Now, to return to the question at issue: I must say, at the very outset, that the gentleman who reported on this matter thinks that it is possible to destroy a primitive chancre before it has had time to taint the system. M. Velpeau is of the same opinion, but he considers these cases very rare. I confess, likewise, that they are very rare, but simply because we are seldom consulted in time. M. Roux would like the disease to be left to itself.

Lancet, Jan. 1, 1848, *p.* 6.

[In another lecture, M. Ricord explains more particularly his *abortive treatment of gonorrhœa.*]

The inflammation, during a few of the earlier days, affects principally the balanic region. This is the time for attacking it with caustics; and among those which are in general use, nitrate of silver is certainly the most efficient. The urethra may be touched with this salt, in the solid state, by means of M. Lallemand's *porte caustique ;* but you will find that patients have a strong objection to this mode of cauterization; and it must be owned, besides, that it is not possible to cauterize uniformly in this manner. I would therefore strongly advise you to give the preference to injections. The latter are an excellent means of curing blenorrhagia—and indeed I do not know how a cure could be obtained without them. Yet how violently some people deprecate them. It has been alleged that injections produce strictures; but this is a mistake; far from doing so, I am bound to say, that they often prevent them: they are to be looked upon as prophylactic measures against strictures, and not as giving rise to them. Is it not with injections that we control blennorrhagia at its very onset?—and what more likely to give rise to stricture than a prolonged blennorrhagic discharge? Is it not a well-known fact, that the chances of stricture always increase with the duration of blennorrhagia? Those who have accused injections of doing so much mischief must have referred to the time when Bell used them indiscriminately, in all cases, and without attending to the distinctions which are carefully studied in our days. When a surgeon in those times was applied to for the removal of a stricture, he invariably found, on inquiring into the history of the case, that injections had been used; and this led, of course, to the suspicion, that the latter had much to do with the production of strictures, and they were at last looked upon as the sole cause of them. In order to render abortive injections effective, you must use a glass syringe of easy action, with a solution of fifteen grains of the nitrate to one ounce of distilled water. The patient is first desired to pass water, and then made to sit on the edge of a chair, without troubling him with a compress on the perinæum, as it is sometimes practised; the penis is to be taken hold of, slightly stretched, and the pipe of the syringe gently introduced into the meatus, taking care to press the lips of the latter so as to bring them into close contact with the pipe. The injection is to be made suddenly, to take the mucous membrane by surprise, as it were; for it sometimes happens that the urethra contracts, and opposes the progress of the liquid. Half the contents of a small syringe are sufficient to moisten the whole canal. You must not neglect apprizing your patient of the peculiar sensations he will experience after this, so that he may not look upon symptoms which are but transient consequences of the abortive treatment as signs that the disease is growing worse. These sensations are the following: very intense pain coming on soon after the operation, and an increase of the discharge; the mucous membrane begins to secrete a serous, sero-sanguineous, or sanguineous fluid, and this is soon followed by a phlegmonous suppuration, of a creamy consistence, which forms a plug in the urethra. The first micturition after the injection gives excessive pain, and the distress is greatest in the balanic region. The stream of urine may assume all the different forms which strictures generally produce. The pain may, however, be mitigated, if the patient plunge the penis in cold water while micturating, and refrain from any effort. All this may take place within twenty-four hours, and these unpleasant symptoms will generally vanish before the expiration of that time. Those which usually persist a little longer are the sanguineous discharge, and the creamy suppuration which appears on the meatus. Care should be taken not to resort to new injections until those have entirely disappeared. The disease, with some patients, is suddenly arrested after the urethra has secreted a few drops of very thick, muco-purulent matter; with others, the cure is preceded by the discharge of a stringy mucus, which gradually diminishes in quantity, and soon entirely disappears. But when greenish, muco-purulent matter makes its appearance, just as it did before the injection was used, it is a sign that the blennorrhagia is persisting, and that we have failed in cutting it short.

The peculiar characters of the disease generally reappear towards the third day after the application of the abortive means, when the latter have proved powerless in controlling it. We may therefore say, taking the mean of time which elapses in different cases, that the abortive injection is to be renewed at the expiration of two days. If, however, the first injection were to produce none of the symptoms which I have just enumerated, it should be repeated on the same day.

It may now be asked,—Whether the abortive treatment I have described is not liable to give rise to very unpleasant consequences? I may answer thereto that this, like many other treatments, has its advantages and its drawbacks. It cannot be denied that it may produce lypothymia or pain in the glans, faintness, alarming hæmorrhage, a retention of urine, consequent upon the swelling of the mucous membrane; but all these will yield to ordinary means, and do not constitute a sufficient reason for giving up this peculiar mode of treatment, which has undoubtedly rendered very great services to humanity.

To secure all the benefit which the abortive treatment holds out, we should not confine ourselves to injections; they will very often succeed without the assistance of any other agent; but as they sometimes fail when used alone, we should be careful to combine them with the internal use of copaiba and cubebs. These substances and the injections should therefore be made to act simultaneously, and it is indispensable to give them in large doses. The injections modify, and create a new action in, the mucous membrane, and copaiba and cubebs, by yielding their principles to the urine, contribute powerfully in rendering that modification more effective.

Lancet, Dec. 11, 1847, *p.* 617.

106.—*On the Constitutional Syphilis of Infants.*—By MM. Trousseau and Lasegue.—The authors consider it established that syphilis may be transmitted either in its primary or secondary form directly from the mother to the infant; but they hold that there is no proof of the transmission of tertiary lesions except as a consequence of the primary or secondary forms.

They are disposed to deny the appearance of syphilis in the infant at birth, or at any period before the second week. They suppose the alleged cases of its earlier appearance to have been founded on misconceptions, either of accidental ulcerations or mucous discharges, which prove nothing with regard to the constitutional affection, or of a general cachectic aspect, which has been described with great confidence, but which MM. Trousseau and Lasègue consider as being too vague in its characters, and too uncertain in its occurrence, to form the basis of a diagnosis.

One of the earliest and most characteristic signs of the appearance of syphilis in the infant is a coryza, which begins at first with mucous secretion, followed by serous and purulent discharges, and by hemorrhage of greater or less frequency, and terminating in caries and deformity of the nasal bones. This affection they believe to be peculiar to syphilitic infants.

Almost equally characteristic is a particular discoloration of the skin, which becomes tarnished and loses its transparency, without, however, any preternatural turgescence or shrinking. The colour is unequally diffused over the face and trunk; the greater its diffusion, the less, generally speaking, is its intensity. This tarnished hue of the skin rarely lasts more than a week.

Next in importance and succession are the eruptions. On this point the authors remark, that it is impossible to found a valid diagnosis upon an eruption taken apart from all other symptoms; but that the concurrence of an eruption with other and less variable signs, is sufficient to place the conclusion upon a firmer basis. The different characters supposed to indicate a syphilitic eruption are then discussed, and it is shown that neither the copper-coloured stains, nor the dark hue of the crusts, nor the circular disposition of the eruption, can at all be relied on in the diagnosis of infantile syphilis.

The above are the earliest and most characteristic symptoms; in the subsequent progress of the disease the infant becomes cachectic; accidental wounds assume an unhealthy aspect, and heal with difficulty; the umbilical cicatrix is apt to remain open, and to fungate. Sometimes, though by no means constantly, there is gradual emaciation; the violence of the internal disorder bearing no proportion to the intensity of the external signs. The infant does not take the breast readily; sleep is short and interrupted; it cries frequently, and without appreciable motive; and, concurrently with these symptoms, diarrhœa is established, which it is exceedingly difficult to subdue. The mouth and anus, where the mucous membrane joins the skin, are cracked and fissured, and the discharges by stool are often bloody. Under these circumstances the infant, impoverished and weakened in constitution, falls a victim, either to the chronic disorder, to the reigning epidemic, or some accidental acute disease. The fatal sinking is in general extremely rapid, and not preceded by the usual warning circumstances, and the inspection of the body does not explain the rapidity of the fatal termination. The most constant lesion is serous effusion into all the cavities.—*Archives Générales de Médicine.*—October 1847.

Monthly Journal, Dec. 1847, *p.* 436.

107.—*On the Treatment of Syphilis in Austria.*—By M. Sisovics, chief Surgeon to the General Hospital of Vienna.—[M. Sisovics is a non-mercurialist, and it will be seen that his mode of treatment resembles, in some respects, that followed by many English practitioners.]

To commence with the treatment of blennorrhagia. The plan of endeavouring to cut short an attack of this malady, as soon as its first symptoms make their appearance, by injections into the urethra of nitrate of silver, of acetate of lead, &c., is looked upon as uncertain and reprehensible—in the latter point of view, as exciting violent inflammation of the urethral lining membrane of the epididymis and prostate, whence result buboes and retention of urine, and as a fresh and fertile source of consecutive diseases. M Sisovics would rather employ emulsions, local and general baths, and other antiphlogistic measures, with which, and the due observance of hygienic rules, he has had much more success. After the disappearance of inflammatory symptoms he would have recourse to the balsam of copaiba, with an equal quantity of nitric acid, in doses of twenty drops in water, gradually augmented; or he would mix the balsam with carbonate of magnesia, making it into pills, or with gum, in the form of emulsion. In five or six weeks, under this treatment, recovery takes place, without fear of relapse. When this period has elapsed, blennorrhagia no longer exists, but another malady, depending upon a metamorphosis of the texture and secretion of the urethra, of its membranous part and bulb, of the prostate, of the neck of the bladder, or of the bladder itself, so that the discharge present is but a symptom of the latter. Cubebs are not approved of, since they will often cause heat of the rectum and bladder, with tenesmus, &c.

In syphilis, he would encourage the progress of a chancre, that the diagnosis may be rendered more certain; and hence he uses local emollients and baths. When the syphilitic nature of the ulcer is decided, he gives drinks of substances calculated to produce diaphoresis; as decoction of sarsaparilla, of guiacum, &c.; and then proceeds to give the preparations of iodine, internally and externally, also by way of local baths and fomentations. He does not deny the influence mercury may have; but yet refers to the many evils its administration brings about, and puts it in opposition to the salts of iodine, and their undoubted advantages. But he disapproves of the protiodide and biniodide of mercury, and especially the latter, as producing serious effects on the stomach and other organs. He administers the iodide of potassium before the noonday meal, that there may be no fulness of the stomach. He has observed good effects to follow the use of iodine baths, and the more when two or three pounds of common salt have been added to them. The preparations of iodine he also employs against the sequelæ of syphilis; such as swelling of bones, ozæna, condylomata, &c. With this plan of treatment a certain regimen must be followed. M Sisovics has noticed that starchy substances retard, whilst meat and non-farinaceous vegetables favour the cure. He clothes his patients warmly, keeps them to their room, allowing only a brief departure from it during the middle of the day.

The iodine treatment of syphilis M. Sisovics has pursued for six years, in 800 patients, and has met with very great success. He remarks that syphilis, as well as scrofula, &c., when arrived at a certain point in intensity or duration, may not yield to iodine. In scrofula, particularly where there is caries of the bones, M. Sisovics uses a compound of iodide of potassium with cod-liver oil. Lastly, this gentleman believes that no characteristic and infallible sign of chancre is known; but that the slow course observed in all the changes of a chancre may be considered as the essential sign of a syphilitic ulcer.

Lancet, March 11, 1848, *p.* 288.

108.—*On the Hereditary Transmission of Syphilis.*—By M. Ricord. —As long as an infected father is under the influence of constitutional syphilis, the germ which is by him conveyed into the uterus carries along with it the syphilitic diathesis; and it must be noticed, that evident manifestations upon the father are not absolutely necessary—the diathesis is quite sufficient to produce upon the offspring the effect I have mentioned. When the secondary period is passed, and the tertiary manifestations begin to appear, the disease is no longer transmissible; the children are then born with another disposition—viz., the scrofulous; and the tertiary symptoms of the mother have the same influence on the child as those of the father. Remember, before we proceed any farther, that there is no such thing as an infection of the child by the mother, she having been contaminated by the father; but that, as I said before, the husband procreates an infected child, which may then propagate the secondary poison to the mother; for where there are no children the mother does not suffer. But suppose the mother to conceive whilst herself and the father are quite free from the syphilitic diathesis, and that this diathesis subsequently happens to arise with the father, can it be transmitted to the child? I do not hesitate in answering this question in the negative, and I must look upon that opinion as very absurd, which supposes that the father can contaminate the fœtus through the membranes. In order that a child, the offspring of healthy parents, should be at all infected, after it has existed more or less time in utero, the mother must, by direct inoculation, become affected with an indurated chancre, and all its consequences; then the fœtus may inherit the diathesis of the mother. The latter might perhaps transmit the diathesis to a first fœtus by means of a second germ, (the first being quite healthy,) in a case of super-fœtation; but even under these circumstances it would be still by the instrumentality of the mother that this first fœtus would become contaminated. It is therefore evident that the mother, in order to infect her child, must have upon herself a secondary syphilitic affection, either acquired whilst the fœtus is in utero, or before that event. But we unfortunately do not know what is the latest period of pregnancy in which a woman, who happens to take the disease, can contaminate her offspring; in other words, we do not know whether a diathesis contracted during the eighth or ninth month of conception may still be transmitted to the fœtus. The child may, moreover, be infected by direct contagion on its passage through the vagina, if the mother has, in that region, or in any part of the track along which the fœtus has to be expelled, primary inoculable sores; or if it were received at its birth by a person, in the same state as the mother; but this kind of infection is not inevitable.

Lancet, April 8, 1848, *p.* 383.

109.—*Operation for Phimosis.*—By M. Ricord.—His method is as follows:—The penis is allowed to remain in its natural position, and no traction is used: a circular mark is made with ink upon the prepuce, about two lines anterior to the base of the glans, and parallel to the corona: a long and strong needle, its point covered with a wax head, is then introduced between the glans and prepuce, and made to pierce the whole thickness of the latter, on the mesial line, and a little in front of the circular mark. The mucous membrane and skin of the prepuce are thus fixed, and the needle is allowed to remain. Behind it, and in a longitudinal direction, a fenestrated forceps, with notched edges, is then firmly applied. The fenestræ of the instrument correspond to the circular mark and the glans; at this stage of the operation the latter is to be pushed backwards. The next step is to pass sutures, five or six in number, through the fenestræ; and when all the threads are applied, the prepuce is shaved off with a bistoury made to glide between the needle and forceps. The latter is then withdrawn carefully, so as not to disturb the ligatures. The assistant should be desired to press the forceps very tightly when the prepuce is being shaved off; if this be neglected, the prepuce will yield, and the sutures will be cut. When the forceps is removed, the arteries which are noticed to bleed, should be tied or subjected to torsion; the threads which pass above and below the glans are then divided in their centre, and the respective ends of each half resulting from this section are tied, to bring the mucous membrane in contact with the skin. Of course there will be twice as many sutures as there were threads passed.

Treatment.—We should, after this operation, enforce rest, low diet, aspersions of cold water, and camphorated pills; union by first intention rarely takes place completely. The submucous cellular tissue will generally be found infiltrated with serosity on the next day, but it is gradually re-absorbed. The sutures ought to be removed on the fourth day; they might, if left longer, lacerate the tissues. The parts are usually healed up by the tenth or fifteenth day, excepting in those cases where the union by first intention takes place as early as the fourth or fifth.—*Lancet*, November 27, 1847.

Provincial Medical aud Surgical Journal, Jan. 12, 1848, *p.* 27.

AFFECTIONS OF THE SKIN.

110.—ON CALLOUS ULCERS OF THE LEG.

By Professor SYME, F.R.S.E., &c.

[In Mr. Syme's work, "Contributions to the Pathology and Practice of Surgery," is the following method of treating these tiresome cases. He says:]

In 1829, I proposed a plan of treatment (for the relief of callous ulcers) which has now stood the test of sixteen years' trial in most parts of the world, and may, I think, be regarded in every point of view as preferable to the other (the treatment by strapping and bandaging). This was to apply a large blister over the sore and neighbouring swelled part of the limb, which has the effect of speedily dispersing the sub-cutaneous induration and thickening, so as to relax the integuments, and thus remove the obstacle opposed to healing action. In the course of a short time, seldom exceeding a few days after the blister has been applied, the surface of the ulcer, however deep it may have been, is found to be on a level with that of the surrounding skin; not, of course, through any process of reproduction or filling up, but merely from the removal of interstitial effusion, allowing the integuments to descend from the position to which they had been elevated, as may be readily ascertained by measuring the circumference of the limb, before and after it has undergone the effect of blistering. But, along with this change of form, the ulcer in other respects no less speedily acquires the characters of a healing sore, assuming a florid colour, affording a moderate discharge of purulent matter, and presenting a granulating surface with surrounding margin of cicatrising pellicle. No subsequent treatment beyond the attention requisite for ensuring quiet and cleanliness is needed, and recovery is completed, not only more quickly, but with much less tendency to relapse, than when accomplished by other means.

With regard to the varicose ulcer, the author states that his opinion is not in favour of aiming at what is called the "radical cure," by obstruction of the vein or veins concerned. He has frequently practised the method of Velpeau, who accomplishes the object of obliteration by passing a pin through the skin under the vessel, and then tying a thread lightly round the included part; and has never met with any bad consequences from doing so: but he is nearly satisfied, from what has fallen within his own observation, that the operation is barren of good effects in permanently remedying the tendency to ulceration. The *black wash* has long seemed to him the best application for promoting cicatrisation of the ulcer. If the sore comes under treatment in an inflamed or irritated state, poultices should be employed in the first instance; and if the depressed surface and thick edges denote a complication of the callous condition, blistering will be proper instead of such relaxing means.

Medical Gazette, Feb. 25, 1848, *p.* 335.

111.—ON THE TREATMENT OF BURNS.

[Numerous papers on this subject have lately appeared in the Medical Journals, more especially in the "Provincial." We expect an interesting report from Mr. Crompton, of Manchester, on the subject, at the next meeting of the Provincial Association.

Meantime we give the views of a few gentlemen who have written on the subject, and first, those of Prof. Cooper:—]

Burns may be classed in six varieties:—In the first there is just a redness of skin where the degree of heat which has been applied has not been intense, and there is little or no sloughing, and some erythema; and in a very few hours, or, at most, in a day or two, the effects will subside, and the cuticle peel off, leaving no remains of injury in the part. It is very true that even this degree of heat may produce great injury, and even danger where it is very extensive, as it suspends the functions of the skin, very much to the loss of the whole system; the pulse is quickened, the tongue red, and the mucous membrane of the alimentary canal is excited. In the second variety the degree of heat has been greater, the redness is darker, and sloughing more considerable, but what marks it more particularly is the formation of vesicles, which sometimes rise immediately after the application of heat, and in other instances, within twenty-four hours afterwards, contain serous fluid. In the third class, the surface of the cutis suffers, and is more or less destroyed; the vesicles attending this injury contain turbid blood and serous fluid; you may know it by the appearance of the part, it having a yellowish or light brownish discoloration. These parts are converted into eschars, from which the patient suffers no pain, unless pressure be applied, which produces suffering by affecting the living parts between the eschar. In the fourth class, the whole surface of the cutis is destroyed, and more or less of the subcutaneous texture is injured; the discoloration of the eschars is also of a deeper colour. You may observe that these eschars are stiffer than those in the preceding classes and also more brittle, and the skin around them is puckered and wrinkled. Upon the separation of these eschars you find ulcers, from which granulations are formed and they spread in great luxuriance; there is also profuse discharge of pus. In the fifth class of burns the textures more deeply situated are involved, as the fascia and muscles; sometimes nerves and vessels, not destroyed, are included. The eschars are thicker, cold, black, and brittle; they are longer in separating, but when they do separate, there is a very rapid discharge of pus, and quick granulations. In consequence of the muscles being involved, their action is impeded, and it often happens that the whole functions of a limb are suspended by a burn of this kind. In the sixth class the limb itself is turned into a black, insensible mass, as sometimes occurs in large iron foundries, where the hot metal comes in contact with the lower extremities; the foot, for instance, is placed in the groove or cutter where the hot metal runs, and is at once converted into an eschar, when, indeed, it is not at once annihilated. I need not tell you that in the former case you must amputate the member.

The constitutional symptoms of burns may vary much; I may tell you they are divisible into two classes; those arising from the shock and irritation of the system produced by the action of heat; and those which come with the reaction that takes place, such consequence implying hectic disturbance and its usual concomitant circumstances.

A burn may be only superficial, and yet, from the extent of its surface, highly dangerous, and perhaps fatal, from the shock experienced by the system. It may produce such depression of the circulation that you can scarcely feel the beating of the arteries of the wrist, and the whole body may be in a state of utter prostation. Now, all the danger arising from the first and second variety of burns is in the first stage, a fact which you will take notice of, as it does not apply indiscriminately to the rest; and, if the patient get over the first stage, there is small danger to be apprehended from the rest; resolution will take place, and within twenty-four hours the danger will have passed away. Not so with burns of the third, fourth, and fifth degree: involving the deeper textures, they are not at once attended with all that constitutional danger attending burns of the first and second degree; but in three or four days, when the process commences by which the eschars are separated from the living parts, a great degree of constitutional disturbance takes place. This process may take three or four weeks for its accomplishment, but it commences within three or four days of the injury; and that period is always one of great danger in burns of this degree. Dupuytren called this dangerous disturbance, the irritation from the injury, or, as we should say, the shock.

The second period of danger is during the inflammatory stage. The third period of danger is when suppuration is going on, and the great discharge tends to produce hectic.

Medical Times, Dec. 4, 1847, *p.* 129.

[The following is an abstract of the treatment which Professor Cooper recommends:—Burns of the first degree, except when occurring on the head and face, or extensively on the trunk, may be treated by cold applications, or flour, or carded cotton may be applied, and suffered to remain until cleanliness, or the patient's sensations dictates their removal. Burns of the second degree, may be treated with the same applications: and if the vesicles are large, the fluid may be let out by a puncture with a very fine pointed instrument. When burns are of the third and fourth degree, they should be treated with the lime-water and oil liniment, turpentine liniment, or poultices, until healthy pus begins to be secreted, and granulations form, when a mild astringent ointment, as the calamine cerate, should be used. When there are high fungous granulations, nitrate of silver should be applied, or a powder of myrrh and calamine sprinkled on the part, or straps of adhesive plaster applied.

The great point in the local treatment of burns is, to prevent the access of air to them, by keeping the parts well covered, and removing the dressings as seldom as possible. When the dressings of a large burn are to be removed, only one part of the surface should be exposed at a time.

As to constitutional treatment, it consists, in the period of shock, in the administration of opium and stimulants, with external warmth; and, for children, the warm bath. When reaction takes place, it must be moderated, if requisite, by antiphlogistic treatment: opium being still however useful. Again, in the period of profuse suppuration, bark, with acids, opium and wine, together with mild purgatives, are to be employed.]

Medical Times, Dec. 11, 1847, *p.* 149.

[Mr. Erichsen, remarking on the analogy which exists between the morbid appearances after burns and those from eruptive fevers, says that]

Both after burns and the eruptive febrile diseases, "nothing is more common than to find the mucous membrane of the stomach and bowels congested or inflamed, the follicles being enlarged and prominent; together with evidences of meningitis, whether consisting in the deposition of lymph, or the effusion of serum, with more or less congestion of the cerebral substance. Inflammation of the bronchial membrane is also of very frequent occurrence, and inflammatory congestion of the tissue of the lungs in its different stages is by no means rarely met with. Thus, then, the lesions that occur, as a consequence of the eruptive febrile diseases, are very similar, in many respects, to those that are found in fatal cases of burns.

When we consider that the average quantity of the cutaneous secretion amounts in a healthy adult to eleven grains in the minute, or between two and three pounds in the twenty-four hours, (Seguin) we cannot suppose that this secretion should be suddenly arrested to the extent of one half, or even more, as it necessarily must be,—when a corresponding portion of the skin is injured by the action of caloric, without its being absolutely necessary that one of two things should happen; either that an antagonistic secretion, to a corresponding amount, be set up from some other tissue or organ, or else that a degree of plethoric distention of the whole vascular system, giving rise to congestions of internal organs and membranes, and effusions into serous cavities, take place. Now, the first does not occur in most cases of burns to a sufficient extent, but the system becomes hyperæmic. Congestions ensue in the mucous membranes, partly from the condition that is common to all the tissues, and partly from the increased afflux of blood that is always attendant upon increased functional activity of a part. The brain and lungs, as well as other large organs, occasionally become engorged, effusion of a more or less bloody fluid takes place into the different serous sacs, the arachnoid amongst the rest, and death ensues from causes that are themselves the immediate effects of suppression of the natural secretion of the skin. By this means we may account for the occurrence of death in the earlier period of burns, before there has been time for inflammation to be lighted up, and also for the fatality of those injuries of this nature, that are extensive but superficial,—burns of the first and second degree,—in which cases the functions of the skin injured are entirely and suddenly arrested.

The practical bearing of the facts that have been mentioned in the first part of this paper, on the constitutional treatment of burns, is sufficiently obvious. If, as has been stated, the immediate cause of the occurrence of internal congestions and consecutive inflammations be the suppression of the cutaneous transpiration to a greater or less extent, and consequent retention in the system of a large quantity of fluid that ought to pass off by the skin, we should, in order to prevent the supervention of these secondary diseases, endeavour to set up such a drain on the system as would, as rapidly as possible, compensate for the arrest of the secretions of that tissue, and have a tendency to restore the balance of the circulation, disturbed by the accumulation of an unusual quantity of fluid in the system. This may either be effected by the employment of diuretics, so as to induce an increased action of the kidneys, by guarded bloodletting, carried to such a length as the powers of the patient would allow, or else, (what would be better, if time and the nature of the case would admit of it,) by encouraging the process of suppuration as quickly as possible. It is a question whether diuretics or bloodletting might not be of advantage in preventing internal congestions in extensive *superficial* burns, in which the suppurative process would, probably, not be established; the injury not being sufficiently deep for that purpose. On the other hand, when the burn extends to a greater depth, if there be no immediate occasion for the loss of blood, from the actual occurrence of visceral mischief, the process of suppuration should be hastened and maintained, consistently with the powers of the patient, as a useful drain, and as perhaps the best mode of relieving the system from the pressure of the fluid retained within.

Mr. Erichsen concludes with the following words:—"On taking, then, a general review of the constitutional treatment of burns, it may be stated that the first object should be to relieve the system of the abnormal quantity of fluid that must have accumulated in it, in consequence of the arrest, to a greater or less extent, of so important a secretion as the perspiration. This may be accomplished either by the administration of diuretics, by guarded bloodletting, or by encouraging the process of suppuration, if it be deemed prudent to wait till this be established. Secondly, that any appearance, however slight, of the supervention of inflammation in the organs contained within the head, chest, or abdomen, should be watched with the utmost anxiety, and treated, if it do occur, as the circumstances of the case will admit. And, thirdly, that the process of suppuration should be maintained or arrested with a due regard to the state of internal organs, and the condition of the powers of the system."

Provincial Medical and Surgical Journal, Feb. 9, 1848, p. 75.

[Mr. T. M. Greenhow, senior surgeon to the Newcastle Infirmary observes,]

When slight and superficial, any plan will prove successful. When very extensive and deep, none will succeed in saving life, though suffering may be alleviated; and it is in intermediate cases chiefly that discrimination is required in the choice of remedies.

1. The application of oil of turpentine has, according to my experience and observation, afforded the greatest relief from suffering, and been most successful in establishing a new and healthy action in parts extensively and deeply injured, by the application of excessive heat. The best form of application is (turpentine) thickened with ung. resinæ; and I have found in extensive burns, that lawn or silver paper, dipped in this when warm, has been a very convenient and successful method of employing it. The paper adapts itself well to the injured parts, and may be replaced, or deficiencies repaired, as often as may be required. When suppuration has been established, an ointment with creta has been found by myself the most soothing and successful suc-

cessor to the turpentine dressing; and, at a more advanced stage, when the healing process is apt to become nearly stationary, it often receives a useful stimulus from a lotion of camphor mixture, one pound, tincture of opium and solution of lead, each, one drachm. The part must be covered with lint dipped in the lotion, and protected with oil silk and a bandage.

2. Cold applications do well in slight burns, and I have found them especially useful in burns of the face, accompanied with extensive injuries of other parts. In some cases of this sort from the explosion of gunpowder, I have employed lint dipped in cold water successfully, the other injured parts being dressed with turpentine, as before described. A severe example of this kind is at present convalescent in the infirmary of this place. The nature of the part, and necessarily exposed condition of the face, render the cold water dressing extremely convenient, and of easy application.

3. In slight burns without vesication, cotton or flour answers well. I may add that, when the injury is so general and severe as to forbid all hope of recovery, to envelope the entire person in cotton, is perhaps the most comfortable plan that can be pursued.

4. When the nervous system has received a great shock, internal stimulants are necessary, and opiates are often of great service. Subsequently the diet ought to be liberal, and quinine is useful as a tonic.

5. On the chest and abdomen burns of equal extent are attended with more hazard than on the extremities.

6. Contracted cicatrices are best prevented by the *non-application* of escharotics. The exuberant granulations attendant on burns are the process employed by nature to ensure an adequate extension of new skin. If this process is uninterrupted, the cicatrix becomes smooth and even, and the subsequent contraction is always increased in proportion to the destruction by caustics, of the healthy, though at first sight, perhaps, apparently too bountiful, granulations.

7. Of *post-mortem* appearances in cases of burns, I have no adequate experience.

8. When the injury is extensive and deep, especially when occupying a large portion of the trunk, and in very young subjects, the prognosis is always unfavourable, though the issue is not necessarily fatal. Extensive burns of this description are not unfrequently succeeded by phthisis, even when the patient appears convalescent, as regards the immediate effects of the injury.

9. Cicatrices are best treated by separation from the subjacent textures by a broad incision and subsequent careful dressing, with the use of mechanical means for preserving or restoring the natural relation of parts which have been preternaturally approximated.

10. The best preliminary treatment of burns is to bathe assiduously the injured parts with oil of turpentine.

Provincial Medical and Surgical Journal, Feb. 23, 1848, *p.* 101.

[Mr. Dorning, of Swinton, after stating that the Lin. Terebinth of the London Pharmacopœia, spread upon tow, was the ordinary application to burns when he was a pupil at the Manchester Infirmary, says :—]

It is now upwards of twelve years since I commenced practice, and during that period I have again and again been called upon to attend colliers burnt by explosions in the coal mines, which in this neighbourhood are of very frequent occurrence, and during the whole of this time I have employed flour as a dressing, except in one case, when it occurred to me that I would apply flour to one arm, and cotton to the other, (both equally severely burnt,) in order that I might judge which was the best. The arm to which the flour was applied healed somewhat more rapidly than the other, and with less pain to the patient, thus confirming my impression of the great value of flour as a dressing in burns. I now use it in *all* cases, be they extensive or the contrary. In the slighter cases, I think its effects are more satisfactory even than in the severe. When the burn is upon the back, I keep the flour in apposition by means of cotton, which I procure in long flakes, "carded," and apply from the shoulders to the waist, and then crossways round the waist, so as to effectually retain the flour upon the burnt surface. The flour must be of the *best quality*, and applied freely. In December, 1843, I attended two of the Earl of Ellesmere's colliers, at Worsley, which were dressed with an inferior kind of flour furnished by the patients; they were proceeding less satisfactorily than I could have wished; I therefore procured some *fine flour* in my own neighbourhood, and was surprised at the improvement the change had effected in a few days. I apply the flour with a "dredger," and allow it to "cake," simply directing the attendant to remove any discharge with a piece of soft old linen, or cotton wool, and not to disturb the "cake," but allow it to become detached of itself, when it must be removed, and the raw surface again covered with flour; and this process must be repeated until the "cake," on detachment, leaves a healthy surface, which it generally effects in fourteen or sixteen days. The pain produced by flour is, in my opinion, considerably less than is produced by any other mode of dressing, and most certainly not a *tenth* part so severe as the dressing with linimentum terebinthinæ, above alluded to, occasions. There is also considerably less risk of contractions following the cicatrization of burns cured by flour, than those cured by other means. I may state that next to flour, I consider cotton the best application in burns.

The ulceration remaining after severe burns I heal with ceratum calaminæ, unless it is in the vicinity of the hands or face, when I continue the use of flour.

[Mr. Higginbottom, of Nottingham, states that for the last twenty years he has used nitrate of silver as an application to burns, particularly those of the first and second class, and thinks it the best application; *first*, because it alleviates the pain; *secondly*, because it forms an effectual covering from the air.]

The nitrate of silver has the peculiar property of preventing subsequent inflammation, vesication, ulceration, and sloughing, therefore the burn or scald is limited in its extent, diminished in severity, and consequently less dangerous, for the danger is generally in proportion to the extent of surface destroyed.

After the application of the nitrate of silver, the parts should be exposed to the air if practicable, to form an adherent eschar; this will be found invaluable in burns and scalds of the face, neck, breast, and abdomen, the latter being protected by a fracture-cradle when in bed, which will defend the parts and facilitate the formation of an adherent eschar. If, from accident or any other cause, the eschar should be removed, a repeated application of the nitrate of silver will be necessary.

Where the parts cannot be exposed to the air to form an adherent eschar, as on the back, &c., the nitrate of silver must be applied, and afterwards covered with plasters of the neutral ointment,—the unguentum plumbi compositum (London Pharmacopœia,) spread on linen, and then secured tightly by a linen bandage. The dressing must not be removed before the fourth day; at the same time allowing any adherent dressing or eschars to remain until they separate; after the separation, should there be any sore or inflammation, a slight application of the nitrate of silver, or black lint, may be applied, with or without the neutral ointment. The dressing may be repeated every third or fourth day, as required.

I prefer the application of the *concentrated* solution of the nitrate of silver in burns and scalds, applied in the same way as I have recommended in the cure of erysipelas. (See *Provincial Journal*, 1847, pp. 458, 532.) The surface should be made as clean and as *dry* as possible; any vesications or loose cuticle must be removed. A convenient instrument for the application of the solution is a small piece of sponge secured on the eye of a common silver probe.

Provincial Medical and Surgical Journal, Feb. 23, 1848, *p.* 101.

[Dr. H. BARKER, of Bedford, says:—]

As dresser and House Surgeon under Liston, whose premature death the profession now so keenly laments, I had ample opportunities of observing the good effects of the external application of flour; and so convinced was this distinguished surgeon of the superiority of that over all other applications, that he proscribed everything besides. His mode of applying it was by means of the common dredger, taking care to cover every part of the affected surface. He enjoined the repeated application of the flour to those parts where the discharge of serum oozed through the first applied portions of the powder. He was also careful not to disturb the application until it had completely caked together, and had become loosened by the discharges underneath.

This is the plan of treatment which I have since invariably followed. The application of the flour is very soothing, and in a few cases in which other modes of treatment had been previously resorted to, the application of the flour has speedily been followed by the most marked relief of pain, and diminution of the consequent constitutional irritation. Flour of the finest and best quality should be used; it should be lightly and freely applied, and the complete exclusion of the air should be secured by repeatedly dredging the parts where the escape of serum takes place; perfect quiet should be enjoined, and the application should be allowed to remain until thoroughly undermined by the discharges. Several days, in some cases, will be required to effect this, when the masses of caked flour may be readily removed. I have then had recourse to water-dressing, by means of lint and oiled silk. Cicatrization, if tardy, has been promoted by the substitution of a weak solution of sulphate of zinc for plain water, and exuberant granulations have been effectually repressed by lightly rubbing over the surface a smooth piece of sulphate of copper. The most important indication in these cases is the alleviation of pain and constitutional irritation, by the thorough shutting out of the air; and no application appears to me so effectually to accomplish this as the application of fine flour. It would seem to act less as a foreign body, and better to supply the place of the cuticle, than any other application with which I am acquainted. Indeed, such good reasons have I had to be satisfied with this mode of local treatment, that, unless the weight of evidence which you may collect should greatly preponderate in favour of some other application, I shall not be induced to try any other.

With regard to the constitutional treatment, I have little to say more than that, in my hands, the *muriate of morphia* has been found to be the most eligible form of anodyne. It is followed by less inconvenience than any of the crude opiates.

In conclusion, the application of flour to burns and scalds is probably that which could be more promptly and readily adopted by the public than any other. I would suggest, if the medical attendant be not within immediate call, that the patient be placed on a firm bed or mattress, with the head somewhat elevated, and the injured parts of the surface uppermost; if the limbs be involved in the injury, that they be placed in a straight position; fine flour should then be perseveringly sprinkled over the affected parts by means of a dredger, so as thoroughly to cover the surface. Should the injury be severe, and the distance from the surgeon so great as to render it impracticable for the case to be seen early, strong beef-tea may be freely administered, but in no case should stimulants be given, unless under medical direction. These are all the instructions on the subject which I consider as necessary for the public, and it is my decided opinion that the immediate application of flour in the manner directed, would be followed by much less suffering than of any of the thousand and one popular remedies which we are accustomed to meet with.

[Mr. Newnham, of Farnham, thinks the dressing by cotton more useful than that by flour, "because it more effectually covers and protects the exposed nerves." When the sensitive nerves of the skin are exposed to any great extent, he thinks a fatal result inevitable.

Dr. Glass Black, of Torquay, remarks that the great point in the treatment of burns with cotton wool, is *never to remove* that which covers the surface of the sore: he says "the outer portions which are saturated with the discharge may be cut off, and clean applied, but that covering the wound never."]

Provincial Medical and Surgical Journal, Feb. 9, 1848, *p.* 76.

112.—*On Phagedenic Ulcers.*—By Samuel Cooper, Esq., F.R.S., &c.—[Phagedenic ulcers may occur in other cases than syphilitic ones. The disease is very rapid in its progress and is attended with severe pain preventing sleep, headache, fever, furred tongue, and tenderness of epigastrium.]

"In the local treatment," Professor Cooper says, "bleeding can rarely be resorted to with advantage; venesection exposes the patient to the risks of hemorrhage, on account of the natural tendency of this disease; and leech-bites assume a morbid action, as is just what we see in hospital gangrene. Mr. Welbank found an application of strong nitric acid to the surface an excellent means of arresting the ravages of gangrenous phagedena. His mode of applying it was, after protecting the surrounding skin with a thick coating of cerate, to dip lint in the acid and apply it to the part, the surface of which was thus converted into a firm and dry mass. Simple dressings were afterwards employed, and an evaporating lotion. In France a solution of chloride of sodium, consisting of one part of the concentrated solution in eight of water, is employed, either mixed in a poultice or used with lint. The dressings most used are bread or carrot poultices, a watery solution of hyoscyamus, the liq. opii. sed., with a pledget or poultice over the lint. From a consideration of the predisposing cause you will infer the propriety of attending to diet and regimen; when great debility exists, you are to employ bark, quinine, and wine, with a light nourishing diet. In St. Thomas's Hospital it is customary to allow a mutton chop, with eggs and milk."

Medical Times, Dec. 4, 1847, *p.* 129.

113.—*Ointment for Scald Head.*—Norway pitch, 30 parts; turpeth mineral, 15 parts; red oxide of mercury, 15 parts; lard, 100 parts. Mix. The ointment to be applied night and morning.—*Journ. de Méd.*

Provincial Medical and Surgical Journal, Feb. 9, 1848, *p.* 80.

114.—*Treatment of Scabies.*—This method consists in covering the affected parts with oil, slightly heated to favour its absorption, three times a day. The itching completely subsides in three days; the eruption dries up and desquamates, the redness and swelling disappear, and the patient is generally cured in twelve days. The application should be continued a few days to ensure success. The almond, linseed, nut, and other oils, and even simple lard, will produce the same effect.

Medical Times, Jan. 1, 1848, *p.* 214.

115.—ON TRAUMATIC ERYSIPELAS.

By Bransby Cooper, Esq , F.R S.

[Traumatic erysipelas will not show itself without constitutional predisposition, arising from epidemic or endemic causes; but when this predisposition exists the slightest injury to the tissues may give rise to the disease: hence, arises the propriety of postponing operations on hospital patients, when erysipelas is present in the ward. This is especially applicable to operations on the head and face, regions in which erysipelas is very liable to occur: a liability depending, Mr. Cooper thinks, on the fact that in the head and face most of the muscles are inserted into the skin.

With reference to the tendency to metastasis which exists in erysipelas, Mr. Cooper says:]

The consideration of this fact forms a very important point in regulating our practice, and especially in erysipelas of the head; for, however proper it may be to attempt suddenly to subdue erysipelatous inflammation of the limbs or trunk, by the application of evaporating lotions, or any other means of abstracting the abnormal heat of the affected part, such treatment is quite inadmissible in erysipelas of the head or face, owing to the danger of producing metastasis to the membranes of the brain.

I have more than once seen a patient delirious a few hours after cold had been applied to an erysipelatous scalp, and restored as quickly to consciousness by the substitution of warm fomentations for the evaporating lotion. The rationale of this is sufficiently obvious: the action is due to the free anastomosis between the vessels of the pericranium and of the dura mater, through the substance of the bones of the skull; so that any cause that propels the blood from the pericranium must produce a proportionable influx into the vessels of the dura mater.

Patients attacked by erysipelas (more especially in this metropolis) bear depletion very badly, and there are but few cases in which general blood-letting can, in my opinion, be admissible.

Leeches should never be employed in erysipelas, as their bite becomes a fresh source of irritation; and, indeed, it is frequently the exciting cause of this peculiar character of inflammation.

The only antiphlogistic plan, therefore, left, is that of acting upon the secretions, which effect is readily produced by employing the following remedies:—

> ℞. Hyd. chloridi. gr. iss.; pulv. jacobi veri, gr. iij. M. Ft. pilul. ℞. Magnes. carbonat. gr. x.; sodæ sesquicarbonat. ℈j.; vin. ipecac. ʒss.; mist. camphoræ, ℥j. M. ft. haustus adde succi limonis recentis, ℥ss. et in statu effervescentiæ sumendus bis terve quotidie.

Should the patient evince any typhoid symptoms, ammonia should be substituted for the soda.

If there be much tension of the skin, attended with small blisters, without remission of febrile symptoms, it should be punctured in several places, to allow of transudation of the effused serum. This operation generally affords great relief. With respect to the long incisions recommended by some surgeons, I consider that practice to be worse than useless, unless there be extensive sloughing of the cellular membrane, which will very rarely occur if punctures be made as soon as the necessity for such relief is indicated by the tension of the skin; indeed, I have known fatal sloughing sores induced by the practice of incisions, and in more than one case death occurred from the hæmorrhage immediately resulting from the operation.

When erysipelas becomes diffused, the vivid discoloration of the skin diminished, the tongue dry, and the general signs of debility manifested, stimuli are required; but in common cases generous support is preferable to stimulus: I therefore usually prefer porter to wine or brandy, excepting under the circumstances above mentioned.

Where the inflammation of erysipelas has a great tendency to spread, it has been recommended to attempt to check its course by cauterising with lunar caustic the skin above the inflammation. Some have recommended mercurial ointment to be employed with the same view; and indeed I have seen both of them produce beneficial results by circumscribing the extent of the inflammation. I presume that the lunar caustic and the mercurial ointment close the pores of the skin wherever it is applied, and, preventing the natural cutaneous exhalations, set up a new action, and so tend to prevent the spreading of the erythematous inflammation; for, as far as I have observed, any other ointment will answer the purpose as well as the mercurial.

This fact would certainly lead one to the belief that erysipelas is, at any rate at its commencement, a cutaneous disease, and the extension to the subcutaneous tissues the result of a secondary action.

Medical Gazette, Nov. 12, 1847, *p.* 823.

116.—*On Chilblains.*—By Professor S. Cooper.—It is found that exposure of a part to intense cold while in a state of perspiration is more likely to be followed by chilblains than its exposure to the same degree of cold when it is simply warm. Of itself cold cannot produce true chilblains. The treatment is pretty well understood, and generally agreed on. If you have them in the first and second degree of severity you are to use friction, and rub well with the camphor liniment, or the soap liniment, to every five parts of which you may add one part of the tincture of cantharides; the liquor plumbi diacetatis, or a mixture of two parts of sp. vini camph., and one part of liquor plumbi diacet. Abroad, they immerse the parts in ice-cold water two or three times a day, rub them dry and cover them with a leathern sock; but this method is not universally applicable, and must not be used with patients disposed to phthisis or gout, nor with delicate females. I have already observed that the inflammation which accompanies chilblains is rather languid, and, as they have not much power of reparation, they therefore require stimulants. Ulcerated chilblains should have stimulating dressings, as a solution of the nitrate of silver, Peruvian balsam, a mixture of liquor plumbi acetat. and liquor calcis, or a lotion of chloride of lime, which is recommended by Lisfranc; this may be applied by means of lint. Some practitioners are very partial to a poultice in the first instance, made of oatmeal with some port wine, and they think it is of great benefit. The treatment of chilblains in a state of mortification is conducted upon the same principles as in other instances of gangrene.

Medical Times, Jan. 1, 1848, *p.* 210.

AFFECTIONS OF THE EYE AND EAR.

117.—ON THE TREATMENT OF GONORRHŒAL OPHTHALMIA.

By M. Ricord.

M. Ricord's treatment is as follows:—The patient is to be kept quiet; the head should be raised, and the eyes completely secured from light; the diet very low. The first thing to be done is to rub the nitrate of silver over the affected surfaces, so as to produce a white film. After cauterization the eyes should be sedulously washed with warm water. The patient should be watched after the first use of the nitrate; it will then be perceived that the secretion is momentarily suspended by it, but when the crust formed by the caustic falls off, the pus reappears, but is lighter in colour, and sero-sanguineous. So long as little white streaks, the result of cauterization, remain visible, and so long as the secretion is not again purulent, it may be judged that the influence of the nitrate continues, but if the secretion has become again purulent, the cauterization may be repeated; indeed it can be safely used three times a day. The eye must be repeatedly cleansed during the day, and poppy-head fomentations be constantly applied; poultices are to be eschewed as they favour œdema. Mercurial frictions are injurious at this stage, not so at a later period.

If there be chemosis, this state should, if possible, be removed, while it is merely the result of œdema; when it has become phlegmonous, the conjunctiva is so distended as to be with difficulty seized with the forceps. The excision should be preceded by cauterization, and is to be made with curved scissors and flat forceps. When chemosis has reached the phlegmonous state, it cannot be excised, and is to be scarified. If there be much febrile action, blood is to be taken from the arm. Leeches may be placed in the course of the jugular vein, or behind the ears. Mustard pediluvia are to be avoided, as the essential oil is apt to irritate the eyes. Blisters on the nape are advisable on the decline of the disease.—*Abstract of Lecture in the Lancet*, Feb. 12th.

Provincial Medical and Surgical Journal, March 22, 1848, *p*. 163.

118.—*On the Treatment of Purulent Ophthalmia of Infants by Douches.*—By M. Chassiagnac.—M. Chassiagnac has for the last six months employed irrigation of the eye for the treatment of the ophthalmia of young infants with the greatest success; so that while formerly blindness at the Foundling Hospital was constantly occurring from this cause, it is now seldom so produced there. The child is laid on a table, and water allowed to flow from a small tap through a tube over the surface of the eye during from 5 to 15 minutes several times a day. M. Chassaignac has discovered that in this disease a pseudo-membrane is frequently produced, the removal of which much expedites the treatment. The mortality of children suffering from disease of the eyes during the last ten years was 1 in 3; while this plan has been adopted, it has been but 1 in 8. In the course of investigation, this means was found applicable to several other inflammatory conditions of the eye, and also especially for the removal of opacities of the cornea which resist ordinary means. Accounts of its really remarkable success in this last important application, have just been published by one of the assistants at the hospital.—*L'Union Médicale*, No. 140.

British and Foreign Medico-Chirurgical Review, Jan. 1848, *p*. 278.

119.—ON SLOUGHING OF THE CORNEÆ FROM DEFECTIVE NUTRITION,

By W. Bowman, Esq , F.R.S., Surgeon to the Royal Ophthalmic Hospital.

On the 8th March, a mother, herself reduced in strength and looking ill, brought her infant, 13 months old, to the hospital, on account of its eyes. I found that both corneæ were in a state of slough, flaccid, of a pale yellow, like macerated leather; that this slough comprised the whole area, except a very narrow belt of about 1-20th inch nearest to the sclerotica, from which a few minute vessels were shooting towards the line of separation which was already begining to be established between the dead and the living parts. The conjunctiva exhibited very little vascularity, and had evidently not been suffering from inflammation. The infant was pallid and puny, with a pinched and anxious countenance. I found that the mother had been suckling the child till seven weeks from the time I speak of, being herself ill and weak, and very insufficiently nourished; that on going into the workhouse they had been parted, and that she first noticed the eyes to look "weak" three weeks since. The bowels have been constantly purged for eight days; and she has taken rhubarb and magnesia. The compound powder of chalk, with opium, was given every four hours, with liq. cinch. of Battley, and beef-tea, with small quantities of brandy, and Mr. Howard kindly undertook to visit her at her own home. On the 11th (three days afterwards,) I found more evidence of vascularity at the margin of the corneæ, and over the white of the eye, but with hardly any secretion. The bowels had been less relaxed, but the stools still green and loose. She had taken some wine and bark, but would not touch the beef-tea. She was evidently weaker, and moaned constantly. In two days afterwards she died.

In this instance we find the cornea falling into a state of gangrene from defective nutrition; the impoverishment of the blood, manifested in various degrees in the other textures of the body, here leading to the complete destruction of a tissue which naturally has a very small supply of that necessary fluid, and which therefore is but too ready to yield its vitality when that supply is withheld. The case of this poor child finds a parallel in others which have been related, as occurring from actual starvation, or the privation of all sustenance, and perhaps still more aptly in those animals which Magendie confined to a diet of sugar and water, or other non-azotised food, and of which one of the more constant evidences of declining power was sloughing of the corneæ, and the consequent destruction of the eyeballs. I may also mention the case of a woman now in attendance here, and who, on her first appearance some months ago, had a dull, hazy state of both corneæ; the surface having lost its brilliancy, and the whole texture being uniformly obscured. The approach of this condition had been very gradual. It had been attended with no redness, nor was there, at that time, any excitement of the circulation in the neighbouring sclerotica or conjunctiva, or any development of new vessels in the cornea itself. She was pallid, but her muscular strength was not remarkably reduced, nor could I discover that she had been insufficiently fed in regard either to quantity or quality, or that she had any disease affecting a vital organ. Nevertheless, her pulse and countenance bespoke a system in which the powers of life, from some cause or other, were greatly depressed, and Mr. Dixon concurred with me in recommending a strictly tonic course of treatment, comprising steel and quinine, with such modifications in diet, place of abode, and mode of life, as her situation appeared to render desirable. Under this plan which has been continued up to the present time, a steady improvement has taken place in the corneæ. The haze is clearing away in the most gradual manner, and without any unnatural vascularity of the part or neighbourhood, and her looks are much improved in every respect. I cannot help regarding this affection as simply the result of an impairment of the nutritive process in the whole body showing itself in a special manner in this texture of feeble power.

Medical Gazette, Nov. 12, 1847, *p*, 828.

120.—ON OPACITIES OF THE CORNEA.

By W. Bowman, Esq., F.R.S , &c.

[If the laminated tissue of the cornea has itself escaped disorganization, the diseased products may be absorbed, and the cornea may resume its transparency. But if the elements of the laminated tissue are at all displaced or destroyed, permanent opacity will follow, since the new tissue deposited is of less elaborate organization, is opaque instead of being translucent, and fibrous instead of being lamellated. Mr. Bowman makes some very interesting observations upon this subject, but we have only room for those which have a practical tendency.]

It is to be observed, that during the progress of the reparative process, there exists in the part and its immediate vicinity a quantity of fresh material of that kind which denotes an over-activity of the nutritive function, and which, not being wanted for conversion into permanent tissue, will in due course be absorbed. This augments the opacity while it lasts; and it is not till a certain time has been allowed for its removal, after the healing of the breach, that we can say how extensive or deep the permanent opacity may prove; we may generally venture to predict a gradual improvement during some time, in a recent opacity, particularly in young subjects.

What I have now said applies to the greater part of the more common opacities of the cornea: I may allude to one or two other forms which may prove interesting in regard to the question of their precise seat. There are some varieties which appear to be on or near the very surface of the cornea, and which it is probable may occupy the anterior elastic lamina. The very opaque chalky-looking films which often follow the application of quicklime or new mortar to the eye, seem to be of this kind, and so, also, do those which have been supposed by some to be stainings of the surface of the corneal tissue by a deposit from the lead lotion in common use. Occasionally we have a superficial excoriation of the cornea—one can hardly call it an ulcer—which the epithelium limits with abrupt edges, thus favouring the accumulation, on the depressed surface, of the frothy mucus or sud which the movements of the lid furnish. The opacity thus produced is often very opaque, and, unless you were aware of its cause, might seem more serious than it really is. A lens, or the point of a needle, will inform you of its real nature.

There is another form of opacity, which I believe to have its seat in the anterior elastic lamina, although it is vain to endeavour to prove it, except by a section of the parts. It has a silvery lustre, and a very fine texture of interweaving striæ, and it creeps very gradually from near the border, over the surface of the cornea, towards the centre. The epithelial surface retains its smoothness and lustre, and the opacity does not appear to have much depth. Other varieties of opacity, very chronic in their course, and evidently not inflammatory, are liable to form, as I believe, in the same tissue. They may be of a brown tint, with an indefinite margin, and may affect both corneæ at the same time. I am not aware that these are particularly described in books, nor whether they admit of removal, or even arrest. They are probably connected with an imperfect nutrition of the eyeball, and must be left to take their course.

There is a variety of opacity consisting of minute dots, sometimes so small as not to be distinguished separately without a lens; at others, as large as a small pin's head. These are evidently seated on the posterior part of the cornea, and may be referred to the posterior elastic lamina. They accompany an inflammatory affection in which the walls of the aqueous chambers seem to be chiefly involved, in which the iris is usually mottled and dull, the pupil inactive, and the sclerotica more or less injected. Such a dotted opacity was long since pointed out by Mr. Wardrop, and admits of removal, provided the proper treatment is commenced early enough. It probably consists of an ordinary inflammatory deposit of lymph.

There is still another kind of dotted opacity, occurring in the posterior elastic lamina, which I would distinguish from all those yet mentioned, and which is met with in eyes which have suffered a slow disorganizing process, through sympathy with the opposite organ previously lost by operation or accident. In this the dots are remarkably round and separate from one another, often brownish, and therefore overlooked, and scattered pretty uniformly over a portion or the whole of the cornea. Though these sometimes grow fainter under appropriate treatment, I have never seen them altogether removed.

Medical Gazette, Nov. 12, 1847, *p.* 832.

121.—*On the Local Treatment of Corneitis.*—By Dr. Jacob Dublin.—Local applications, except a sedative stupe or tepid lotion with the view of allaying pain if present, are not called for, and in the early and acute stage, such stimulating applications as solution of nitrate of silver or the *vinum opii,* sometimes resorted to, should of course be carefully avoided. At a subsequent period, when the increased vascularity and sensibility of the conjunctiva, induced by the inflammatory action, exist, during what is generally considered the chronic stage, remedies of this description may be used with advantage; but as the principal mischief is so much beneath the surface, and so liable to be aggravated by any irritation, great caution must be exercised in their application. For the removal of the diffused opacity of the cornea proper, which I have described, stimulants may be employed, but not until every trace of inflammatory action has long disappeared. From the variety of stimulants used from time immemorial to remove opacities of the cornea, and the number of them extolled as infallible, it may be presumed that any stimulant will answer the purpose. Solutions of nitrate of silver, sulphate of copper, sulphate of zinc, or the combination called *lapis divinus*, will perhaps answer. I use a solution of iodide of potassium, ten grains to the ounce of water; or, as a substitute for animal bile, said to be effectual, touch the surface with a camel-hair pencil, previously dipped in water and brushed two or three times on soap. The fumes of prussic acid, so much vaunted as a quack remedy, I have not used, being dangerous and troublesome. If this nostrum has any influence at all, it is as any other stimulant. It should be recollected that this diffused opacity, not being a cicatrix from ulceration, disappears in time, and I have no doubt that its disappearance is often delayed by the premature and unnecessary use of stimulants. It is not to be forgotten, that as the inflammation frequently, if not generally or always, extends to the membrane lining the chamber of the aqueous humour, the pupil should therefore be occasionally dilated by belladonna to prevent adhesions. A sedative lotion containing a drachm of good extract of belladonna in eight ounces of fluid, applied with a scrap of old linen occasionally during the day, will answer the purpose, and if it does not, the outside of the eyelids and the brow must be painted with the softened extract.

It is scarcely necessary to add, that for the removal of this disease, the apparent cause of it, or at least the cause of the predisposition to it, should be removed. Generous diet, pure air, and comfortable clothing, will often do more than any medical treatment. I have more than once seen it disappear in an ill-fed, badly clothed child, after removal from a close room in the city, or a damp cottage in the country, to a comfortable bed in the hospital, without the administration of any medicine.—*Dublin Medical Press*, November 3, 1847.

Monthly Journal, Dec. 1847, *p.* 441.

122.—*On Rheumatic Iritis.*—By JAMES DIXON, Esq., Surgeon to the London Ophthalmic Hospital.—[Mr. Dixon sums up a lecture on this disease in the following words:—]

It chiefly attacks the fibrous tissues of the eye, and is always attended with pain, such as accompanies inflammation of similar structures in other parts of the body.

The phenomena are eminently those of vascular engorgement; the sclerotic exhibits a peculiar red tint, and bloodvessels become visible in the iris, where they are never seen in a state of health.

There is little tendency to effusion of fibrin, as compared with the syphilitic inflammation; but, although the fibrin is poured out in small quantity, it is deposited in a situation eminently injurious to vision—namely, between the posterior surface and pupillary margin of the iris and lens.

In the cornea there is a marked disposition to inflammatory deposit, and consequent opacity, and this frequently becomes more marked as the inflammation in the sclerotic and iris subsides.

Abstraction of blood, active purging, and attention to the function of the skin, are the chief points to be attended to in the more active form of the disease. Mere depletion, however, must not be persisted in too long, but must be followed by tonic treatment, to prevent a tedious subacute stage, which otherwise inevitably occurs. Above all, it must be remembered, that the slightest trace of fibrinous effusion demands the employment of mercury, and that, by allowing this effusion to go on, vision is always permanently impaired.

The speedy employment of counter-irritation seems the most likely means of getting rid of these products of inflammation in the cornea, which are hardly less injurious to vision, than deposit in the pupil itself.

Lancet, March 4, 1848, *p.* 254.

123.—ON THE TREATMENT OF SCROFULOUS OPHTHALMIA.

By Dr. Edwards, Physician to the Bath Eye and Ear Infirmary.

[Dr. Edwards recommends M. Morand's plan of treatment for scrofulous ophthalmia, which consists in the application of a strong solution of nitrate of silver to the nasal mucous membrane; there being generally a swollen and inflammatory state of this membrane in conjunction with the ophthalmia.]

The caustic which M. Morand employed was the nitrate of silver, either in substance, or in solution, or ointment; it was applied for the first week night and morning; after this every day, and latterly every second or third day. He particularly advises, that, after cauterization, a deep inspiration should be taken, so that the effects should be as extensive as possible.

[Dr. Edwards gives several cases in illustration of the good resulting from such treatment, We select the first.]

A young gentleman, aged nine years, had for two years frequent attacks of scrofulous ophthalmia of the left eye; during the last five months he had been little, or not all, benefited by the general and local means I employed, both of which have been such as are directed by the best authorities on diseases of the eye. In the middle of April, 1847, the left nostril appearing extensively irritated, (as in fact it had been ever since his eye became affected,) I determined upon employing the nitrate of silver to it, which I did, in solution, (a scruple to an ounce of water,) extensively over the nasal fossa: this was repeated every day for a week, when a great improvement was manifest; the photophobia was so much less that he could open his eye without aid, to allow me to examine it, even in a considerable light. The caustic was then continued every other day for ten days, and after that twice a week for a fortnight, when my patient was quite restored; a slight patch of opacity of the cornea, however, remaining. As I have before remarked, I employed the same general remedies as in other cases, but discontinued any direct application to the eye, except an ordinary collyrium containing bichloride of mercury and wine of opium.

[Dr. Edwards has found the same mode of treatment extremely successful in ozæna. He says,]

In this disease (ozæna) lotions of nitrate of silver or sulphate of copper injected up the nostrils do good; but they appear not be so useful as the caustic directly applied in substance, or in very strong solution, by the surgeon; such lotions might be rather used as adjuncts. A swelling of the upper lip is a very frequent attendant, and I am sure it has yielded more readily to cauterization of the nose than any other remedy which I have seen put in force.

Lancet, *April* 8, 1848, *p.* 389.

124.—ON SUBACUTE INFLAMMATION OF THE TYMPANUM.

By W. R. Wilde, Esq , Surgeon to St. Mark's Hospital, Dublin.

[In the last Vol. of Retrospect, (p. 273) we inserted part of an interesting article by Mr. Wilde on acute myringitis. Besides this disease, there is a subacute inflammation of the membrana tympani, which although perfectly painless, is equally destructive to hearing with the first. Deafness, which appears rather suddenly, is the first symptom which attracts the patient's attention. Of this affection Mr. Wilde says:]

The nature of the disease is only to be learned by a careful inspection of the membrane, which, if we see the disease early, is always of a pink colour, of a tint somewhat paler than that of the monthly rose. Through this, dispersed in various directions, we observe in some cases a few long, tortuous vessels. The transparency and polish of the membrane are seldom much affected at first. The auditory canal does not usually exhibit signs of disease, but the ceruminous secretion is arrested. Generally speaking, there are no constitutional symptoms present, and when tinnitus is an accompaniment, it is usually of a very light character, resembling a slight buzzing or singing. If allowed to proceed unchecked, the membrane becomes thickened and remarkably opaque, from lymphy deposits, and the deafness which ensues is of a most irremedial nature. Collapse or drawing inwards of the tympanal membrane does not usually follow this form of the affection, but ulceration, even to perforation of the membrane of the drum, is not an uncommon attendant upon it.

This disease is slow in its progress, and requires very careful watching. Cases of this nature have been, I feel convinced, repeatedly treated as "nervous deafness." I am inclined to think that it is a true myringitis, in which the inflammation is seated in the fibrous layer of the membrane. In this disease mercury is just as necessary as in that already detailed; it should, however, be given after a different fashion: to be effectual, it must be slowly introduced into the system, so as to produce a steady and gradual effect. The mouth should be kept sore until there is a decided improvement both in the vascularity and in the hearing, or until all hope of restoration has been abandoned, or other circumstances induce us to relinquish this mode of treatment.

[The preparations of iodine, and counter-irritation over the mastoid process, are also useful. In these inflammatory diseases the secretion of cerumen is arrested, and is not restored until long after the original disease has been relieved: nothing, Mr. Wilde tells us, "produces a healthy action in the parts so soon, while at the same time it immediately supplies the best artificial succedaneum, as the *unguentum citrinum fuscum*, the soft brown citrine ointment, applied to the auditory passage in a melted state, with a soft brush."

To relieve the tinnitus aurium, which also remains after the inflammation has been subdued, Mr. Wilde uses the *Arnica montana*. He says:]

The preparation I find most efficacious, is the tincture both of the flowers and leaves, of which the patient should commence by taking fifteen drops in a table-spoonful of the infusion of arnica, and a little of some cordial tincture three times a day. After a few days the dose should be increased one or two drops daily, till it reaches thirty, or even more, unless headach or giddiness be produced, when we should at once lessen the dose, or omit the medicine altogether for a short time.* The state of the bowels should be carefully attended to during the administration of this drug.

When ulceration exists, we should touch the part daily with a solution of lunar caustic, applied with a fine brush. The same mode of treatment is applicable to perforation of the membrane, and I have latterly been astonished at the number of cases in which under this treatment, or touching the edge of the perforation with a fine point of the solid nitrate of silver, applied upon a *porte-caustique*, together with proper constitutional treatment, these apertures have healed up. After an extensive trial of various other escharotics, such as the nitrate of mercury, and the sulphate and nitrate of copper, I find the preparations of silver the best.

Dublin Quarterly Journal, Feb. 1848, *p.* 82.

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* The following is the formula for the tincture prepared for me by Messrs. Bewley and Evans. One ounce and a half of the *flowers* to a pint of rectified spirit of wine; macerate for fourteen days and strain; or, for the tincture of the *leaves*, the same quantity infused for a similar period in proof spirits In prescribing these I usually order them in equal proportions.

Dr. Neligan says: "This tincture may be readily prepared by percolation, having previously macerated the flowers with a little of the spirit for twenty-four hours; or it may be prepared with the cut and bruised root in the proportion of ℥ii. of the root to Oj of rectified spirit. Dose, f. ʒss. to f. ʒii."—*Medicines and their Uses.*

125.—*On Deafness in Scarlatina and Measles.*—Dr. N. MORRELL, in the Annual Report to the Board of Directors of the New York Institution for the Deaf and Dumb, remarks that in twenty-five cases of death from scarlatina, wherein deafness had been a common symptom, the lining membrane of the Eustachian tube, on being examined, presented a character similar to the throat and nostril, being more or less changed, probably very red during life, but after death pale and thickened or softened, and uniformly covered with a thin glairy secretion, in which floated a great number of ash-coloured shreds, probably changed coagulable lymph, certainly not the natural mucous secretion of these membranes. This state extended uniformly through the Eustachian tubes quite into the tympanum, in which some of this changed secretion was always discoverable. The membranes lining the external meatus partook of the state of the skin: the natural secretion of wax seemed to have been nearly or quite suspended, and the membrane covered with many minute points, from which issued a sero-purulent secretion instead of wax. In fifteen cases of death from measles, where symptoms of deafness occurred during their progress, the membranes of the Eustachian tube and tympanum exhibited, on examination, traces of red vessels ramifying in all directions, together with a remarkable dryness, as if the mucous secretion had been suspended some time before death. The membrane of the external meatus showed that the secretion of wax had been interrupted also. So the exanthemata affect every portion of the tegumentary system. The lining membranes of the auditory passages of the vagina, uterus, and bladder, suffer alike with the skin. In the cure of deafness produced by the exanthemata, syrup of sarsaparilla, made after the old formula—to which may be advantageously added the root of rumex crispus, and the tinctures of the bark of prinos virticillatus and chymaphilla umbellata—is a remedy of the first importance; next, the muriate of lime, an old remedy now much neglected; and lastly, iodine and its preparations as internal remedies. Blisters kept perpetually discharging, placed behind the ears or on the arms alternately, form the remedies to be applied externally. The fauces must be well rubbed with a smooth piece of alum twice a week, to be occasionally alternated with a solution of nitrate of silver, or, when the tonsils are prominent, with the solid caustic not too heavily applied. Lastly, the external meatus must be cleansed once a day with warm brandy, or warm brandy and water, or a solution of iodine, or a decoction of the bark of prinos verticillatus. Perseverance in this course for months, sometimes for more than a year, finally ends with complete success, if the treatment have commenced before disorganization of the external or internal ear.

Medical Times, Dec. 11, 1847, *p.* 157.

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MIDWIFERY,

AND

THE DISEASES OF WOMEN.

126.—ON REFLEX UTERINE ACTION.

By Dr. W. Tyler Smith.

[Dr. Smith devotes much space to show how little the act of parturition has hitherto been studied, and how very few writers have considered uterine action as being of a reflex nature. He says :—]

A few paragraphs by physiologists, a few pages by obstetricians—and these latter chiefly occupied by the purely mechanical part of labour,—make up the sum of our knowledge of the physiology of parturition. How is this to be accounted for? It certainly is not that parturition is a less important function than digestion, or respiration, or even the circulation of the blood, all of which have been so amply investigated. The uterus has been compared by a distinguished living physiologist to the stomach, as being the organ of nutrition and support to the species. We may, with equal or even greater justice, say that the uterus is to the race what the heart is to the individual: it is the organ of circulation to the species. Ages are the channels in which created beings circulate; and man passes continually from the womb of his mother onwards to the womb of time. The succeeding generations of human kind, following one after another, are, as it were, the pulses of the animal Cosmos. Parturition is the systole of the uterus, the unimpregnated state its diastole, and the living beings which flow on in countless numbers are as inconsiderable in the great stream of life as the myriads of globules revealed by the microscope are in the circulation of the blood. Viewed in this way, parturition does but assume its just proportions, and asserts its rights to the attention of the physiologist, as the greatest epoch in generation.

We must go on to develop the dynamical *Idea*—the physiological mechanisms of labour, of which, at present, there exists, within the pale of obstetricy, nothing but the bare data or formulæ for their working out—namely, the muscular structure, and the nervous endowments of the uterine system. The generation is but just passed away which denied the muscular structure of the uterus; and the very existence of the nerves of the uterus some are still found to deny. However, granting that the nerves and muscular fibres have been beautifully delineated by the scalpel of the anatomist, it remains still to study these parts in action. They exist as a picture, but they have not been studied as actors or performers in a drama; and there is even more difference between anatomy (as we now understand the term) and physiology, than there is between painting or sculpture, and dramatic representation.

Lancet, Nov. 20, 1847, p. 542.

The Reflex actions of the uterus are very numerous, and it is upon these, and the numerous extra-uterine reflex actions excited during the process, that the natural performance of parturition essentially depends. Contraction of the uterus, from irritation of the mammæ, as in the act of suckling the child; contraction of this organ from the cold water douche, applied to the vulva or the abdominal surface; contraction excited by irritating the rectum, as by stimulating enemata; or of the stomach, by drinking a gulp of cold water; of the ovaria, by the presence of the menstrual nisus; of the vagina, by manual irritation, as in "taking a pain;" of the os uteri by irritation, as in the introduction of the hand into the uterus,—are all to be considered as so many instances of reflex spinal action. Thus, in parturition, the uterus may be excited, in a reflex form, by irritation of the mammary incident excitor nerves; the pubic and abdominal branches of the intercostals; the rectal; the gastric division of the pneumogastric; the ovarian nerves; and also by the nerves of the vagina, and the os and cervix uteri.

Many of the different forms of abortion—particularly when the causes are extra-uterine—strikingly illustrate the reflex action of the uterus. A series of cases of abortion would be one of the best expositions of reflex uterine action. Abortion may be caused by irritation of the mammæ, from the sucking of an infant, after milk has ceased to be secreted, as in cases in which the mother becomes pregnant during lactation: abortion may be excited, as a morbid reflex act, from irritation of the bladder, by a calculus; by irritation of the trifacial nerve, as in cutting the dens sapientiæ; by the mechanical irritation of coïtus; by plugging the vagina; by disease of the os and cervix uteri—malignant or simple induration, inflammation and ulceration; by the irritation of the placenta attached within the uterine mouth; by ovarian irritation in ovarian disease; by irritation of the rectum, as from ascarides, and the use of irritating purgatives or enemata; by puncturing the membranes, and evacuating the liquor amnii, so as to bring the head of the fœtus to act as an excitant to the os uteri; by irritation of the inner surface of the uterus itself, in cases of blighted fœtus, where the ovum acts as a foreign body; by riding on horseback, or any other violent exercise calculated, by succussion, to bring the head of the fœtus into violent contact with the os uteri: and by other sources of irritation to incident spinal nerves which might be enumerated. All these are so many instances of uterine reflex action, the distant parts of the economy being brought into connexion with the uterus through the medium of the spinal marrow and its special incident excitor and reflex motor nerves. These facts are of most extensive practical application in devising means for the prevention of abortion.

In the cases of abortion in which the irritation is applied to the os or cervix uteri, or the internal surface of the organ, the immediate action depending on the irritability of the uterus itself is called forth, in connexion with true reflex action: but in the instances in which a distal organ is irritated, there can be no doubt whatever of the purely reflex nature of the uterine action which ensues.

In the lower animals, reflex parturient phenomena are constantly observed; the expulsion of the egg of the common fowl has been caused by sprinkling a few grains of salt upon the vulva or velabrum; cold injections have been used empirically, to excite uterine contractions during foaling or calving, in the mare and cow; and the tipula and libellula have been observed, during the period of oviposition, to deposit eggs, whenever they have been shaken upon rough paper, or when the surface of the abdomen has been irritated in any way: these insects, the silkworm moth, and others, go on with the work of oviposition even when the abdominal have been divided from the thoracic portions.

But besides the uterine reflex actions, there is in the Expiratory actions, supervening in the course of labour, from the irritation of the presenting part of the fœtus, another remarkable series of reflex parturient actions, extra-uterine in their seat, but which combine and harmonize in a remarkable way, with the reflex actions proper to the uterus. It is found that tumours in the vagina, or the introduction of the hand of the accoucheur, may produce the same result as the pressure of the presenting part of the child in labour. It has been noticed of tumours, which produce little or no disturbance while they remain in the cavity of the uterus, that no sooner do they pass from the uterus into the vagina, than "bearing-pains," as they are termed, are produced. In other words, the action of the expiratory muscles is excited in a reflex form by irritation of the vaginal mucous surface.

In fully-formed labour, then, we have to study the reflex actions of the uterus in combination with the reflex actions of the respiratory muscles, as they are excited in parturition. By these latter reflex actions, the cavities of the thorax and abdomen become involved as auxiliaries to the uterus, and their expulsory actions combine with the proper reflex action of this organ, to effect the expulsion of its contents. But there are also opportunities of observing the reflex action of the uterus singly, such, for instance, as in cases of paraplegia from disease of the middle portion of the spinal marrow. Here the reflex expiratory efforts, the influence of volition and emotion, are entirely withdrawn, it being quite impossible that these actions can be brought into play when the connexions of the uterus with the medulla oblongata, and the cerebrum, the centres of the respiratory and voluntary actions, are severed. Labour is, in such cases, reduced to very simple elements, being performed solely by the reflex action of the uterus and its peristaltic power.

In natural labour, after the process has fairly commenced, it is the ovum which furnishes the chief stimulus to the incident excitor nerves, in its transit through the different portions of the parturient canal. Besides the mere enumeration of the various spinal excitors, by the irritation of which the uterus may be affected physiologically or pathologically, we shall have to study the order and succession of the normal reflex actions, uterine and extra-uterine, occurring in labour. Parturition is not one reflex act, but a function, the combined result of many such actions, aided by other powers; and we must study the preliminary phenomena, the different stages of the process, and the final accomplishment of the function; when we shall find that Nature has at her disposal a wonderful succession of stimulus and action, exactly adapted to the dilatation of the os uteri and the vagina; the propulsion and expulsion of the fœtus; and providing, also, for the safe contraction of the uterus, and its return to the unimpregnated state.

The uterus, as a motor organ, stands alone in many respects: unlike the rectum and bladder, it is not directly influenced by volition; and, unlike the heart, it is extremely prone to reflex action; it most nearly resembles the œsophagus, which is uninfluenced by the will, but is endowed with reflex motor and peristaltic action. It, however, differs from the œsophagus in the great number of excitor surfaces with which the spinal system places it in relation; neither is there any other organ—not even the stomach—which acts as a spinal excitor to so great a number of organs as the uterus and its excitor nerves, whether we consider it in the impregnated or the unimpregnated states. Hence the physiological necessity for the abundance of nerves recently discovered.

Besides the reflex action of the spinal marrow and its system of excitor and motor nerves, there is the direct action of the spinal marrow,—though this does not play the important part assigned to it by MM. Serres, Brachet, and Segalas,—in which the central organ and its motor nerves, to the exclusion of the excitors, are involved. The state of the circulation affects all the motor organs under the control of the spinal marrow; and they act with increased energy when the circulation is either plethoric or anæmic, though in the latter, exhaustion of the nervous energy quickly ensues. Thus, there is one puerperal convulsion of hæmorrhage, when the heart and bloodvessels have been drained of blood, and another of fulness of the circulation. Want and excess of blood, or materies morbi in the circulation, act as direct stimuli to the spinal centre, and thus the state of the circulation materially affects the uterus during labour. There are also certain agents of the materia medica, which, taken into the circulation, affect the spinal marrow, Thus, the ergot of rye, passing into the blood, affects the uterus by a direct spinal action; so does strychnia, so does the inhalation of carbonic acid, and so, I believe, does ipecacuan—the influence of which in producing uterine contraction is very remarkable. Savine, aloes, alcohol, and the biborate of soda, may probably be added to the same list.

[After referring to the other motor powers concerned in the act of parturition, Dr. Smith says:—]

Volition may be said to affect the process only indirectly. Emotion has a direct influence, but it is accessory rather than essential to its performance. Reflex action is the great physiological power, which being absent, the function of parturition could not be properly performed. Peristaltic or Immediate action is the basic or radical power upon which the other causes of motor action operate. Here, as in other instances, "knowledge is power!" to know the various sources and modes of motor action is almost equivalent to the ability to guide and control their impulses.

Delivery may be effected under a variety of circumstances, and we may consider every new condition in which there is a departure from the natural method as in reality an experiment offered by Nature, and of use in illustration of normal parturition. Delivery may take place in cerebral paralysis, in which volition only is withdrawn—the influence of emotion, all the reflex motor actions, and the peristaltic action of the uterus, remaining. It may occur in profound coma, where volition and emotion are both withdrawn, all the reflex and the peristaltic actions being present. It may also be effected in paraplegia, from disease in the middle portions of the spinal marrow, in which volition, emotion, and the respiratory reflex actions, are cut off; the reflex actions of the uterus itself, and the peristaltic action of the organ, only remaining. It will hardly take place except in rare instances, but it may be excited, as by electricity, even in cases of paraplegia from diseases affecting the lower segments of the spinal marrow, where volition, emotion, and all the reflex actions, uterine and extra-uterine, are removed, and where peristaltic action exists alone. It may even take place at the moment of death, or some hours after dissolution, when it may be excited by the spasm of death itself—by reflex actions continued after death; by the rigor mortis—this peculiar condition affecting the uterus in common with the heart and other muscles; by the peristaltic action continued after death; or by all these actions combined. But putting aside everything save the post-mortem spasm, it is no more wonderful for the uterus to contract and expel its contents after death, than it is for the heart to contract to such an extent as to empty its cavity; for the œsophagus of a rabbit to swallow food; for the œsophagus and cardia of the human subject to expel flatus, as I have seen happen; or for the intestines to contract violently after death—facts, all of which have been repeatedly observed. The excessive action of the uterus before death probably increases its tendency to contract after death. It has been observed, that after death from fevers, attended by spasmodic actions, the post-mortem contractility of the voluntary muscles is remarkably increased.

These different conditions under which the expulsion of the fœtus may take place in health, disease, or even after dissolution, afford in themselves a very admirable analysis and synthesis of the various motor powers by which natural parturition is performed. So far, however, from being used in this manner, such facts have hitherto been made a source of confusion, and the occurrence of delivery after death has been thought to afford positive and conclusive proof that the uterus is, in natural parturition, altogether independent of the nervous centres.

Lancet, Dec. 4, 1817, *p.* 595.

127.—ON VOMITING DURING PREGNANCY.

By Dr. Churchill.

[A patient under the care of Drs. Maguire and Churchill, was seized with severe sickness about the sixth or eighth week of her third pregnancy. Notwithstanding the administration of opium, effervescing draughts, prussic acid, creasote, aperients, ether, lime-water, lemon juice, ice, &c.; and the employment of bleeding, leeching, sinapisms, fomentations, &c., the vomiting continued most obstinately, and she became extremely reduced and emaciated. On October 16th, when the pregnancy was between three and four months advanced, the report is:]

Vomiting incessant all day, and distress inexpressible. On my visiting her, I found her far worse than I had ever seen her, and I really cannot convey by words her agony. When not actually vomiting she suffered more torture from nausea; she lay tossing about in the bed or suddenly throwing herself out of bed, and would roll about on the floor. Her sighs and groans were mingled with shrieks and petitions for relief. Her face was haggard, her eyes sunken and surrounded by dark circles; her body was little more than skin and bone; her stomach retained nothing for a moment; the pulse at 130, and very weak. Occasional suffocation distressing. We heard the interior souffle, but could not hear the fœtal heart. Ordered a little brandy and water. Hoffman and Valerian and the anodyne enema at bed time. 17th.—Vomiting dreadfully all night and day, nothing whatever remaining on her stomach; great debility and emaciation; perceptibly weaker each day; pulse 130, very weak. Teaspoonful of brandy and water every hour, and chicken broth. Opium suppository at night. 18th.—Worse than ever; in such agony as I never before beheld: pulse 130; has taken no food, and is utterly exhausted; placental souffle heard, but not fœtal heart. As no medicine afforded any relief, and as each attack had been worse than the preceding, and as her condition appeared to us to be one of imminent danger, it was clear that some change of plan must be made immediately. We had tried bleeding, leeching, blistering, opium in several forms, anti-spasmodics, lime water, acids, calomel, creosote, prussic acid, stimulants of various kinds, without any apparent benefit, for though the sickness subsided twice, it did not appear to be the direct effect of medicines. On the other hand, the want of food and the constant irritation of nausea and vomiting, had utterly exhausted the patient. She had little or no sleep for five nights; had not retained a particle of food; the pulse had long been 130, and now was rapidly becoming weaker. She was utterly helpless; less restless than before from sheer weakness; her countenance was drawn and sunk; in short, we could no longer doubt that another week of such suffering would end fatally for our patient. Under these circumstances, after most anxious reflection and consultation, and with a painful sense of the responsibility, we decided upon bringing on premature labour, unless some decided change had taken place, at our visit next day. 19th.—So far from any improvement, our patient appeared to be rapidly getting worse; I therefore gave her 40 grains of recently powdered ergot of rye, which she retained three quarters of an hour, but which produced no effect. It was repeated an hour after, and again vomited. As it appeared to increase the burning pain at her stomach, without appearing to act upon the uterus, no more was given. In the evening she was lifted on the sofa, and whilst there, there was a gush of about a pint of fluid (liq. amnii) from the vagina, with some slight pain. 20th.—No rest during the night, and no pains. Desirous to avoid repeating the ergot, I passed a bougie into the uterus this morning, and on October 21st, it was evident that the liquor amnii had escaped, as no fluid followed the introduction of the bougie, nor did uterine contractions come on. We were now greatly distressed: we wished to avoid giving up, and yet, the introduction of the bougie had been ineffectual, and our patient was palpably sinking. During Oct. 21, we endeavoured to keep up her strength by brandy and water and chicken broth, but with little success. 22nd.—As we had no other means at command, we determined again to try ergot. Two doses were given, and though they added to the discomfort of the stomach, after the latter, we found distinct uterine pains coming on at intervals during the day and night, but the vomiting, fainting and exhaustion, rather increased. The stimulants were continued. 23rd.—Uterine pains continued at intervals during the day, though slight; prostration excessive—in fact, her friends thought her dying; pulse 160; nothing remains on the stomach. A stimulating injection was given. 24th.—Remained in the same state during the day, but at night the pains increased in frequency and strength, and at 4 a.m., October 25th, a macerated fœtus, with its secondaries, was expelled without hæmorrhage. She vomited twice that day, and once the next morning, but never afterwards. She now took nourishment, and in a fortnight was perfectly convalescent.

I have entered into this lengthened detail, that you might see the wretched state to which the patient was reduced, the fair trial which the usual medicines had, their failure, and to acquit us of rashness in having recourse to the only means left to save life. That we waited long enough, there could be no doubt; there was a misgiving in our minds for some days, that we had waited too long; but the result disproved this, and afforded us boundless gratification.

P.S. Since the first part of this paper was published, another case has occurred to me, not less remarkable and instructive, though the result has been less favorable.

On the 12th of December I was requested by Mr. Young, of this city, to visit Mrs. S. with him. She was above forty years of age, had borne six children, and was in good health up to seven weeks ago, when she was attacked with severe dysentery, which after the usual treatment, subsided, or rather was superseded by incessant vomiting. For the last few weeks she had retained nothing on her stomach, and was in consequence reduced to the greatest degree of weakness and exhaustion. The emaciation was excessive, and she was literally skin and bone. She was confined to bed, and suffered great agony from retching, both night and day; her pulse was 120, and so weak as to be barely perceptible. I carefully examined every organ of the body, but could find no disease. I thought I could discern a fulness over the pubes, and I asked her if she was pregnant. She did not think so, although her catamenia had been absent four months, and certainly she had no corroborative symptoms. Upon anxious consideration of the case, however, I still inclined to the belief that she was in the family way, and as all the usual remedies had been tried by Mr. Young without success, I proposed to pass a bougie into the uterus for the purpose of bringing on abortion, if she were pregnant. This I did on the 15th of December, but no liq. amnii escaped, and my fears as to the correctness of my diagnosis and the result to our patient were great, for it was quite evident that in her present circumstances she could not live a week. I inserted into the os uteri a small roll of lint, and left at three, and on my visit the next day I found a fœtus of three months lying on the bed. Labor came on in the morning, and she was delivered without much suffering, and without hæmorrhage. The fœtus was macerated, and had evidently been dead for some time, which accounted for the absence of stethoscopic signs of pregnancy.

From this moment the vomiting ceased, she took proper nourishment, and for two days made a favorable progress; but she was then attacked by obstinate and continued diarrhœa, which resisted every remedy, and under which she sank about six days after delivery.

This case is of great interest in these particulars. 1st,—As affording another example of a patient reduced to the verge of death by the vomiting of pregnancy. She was worse when I first saw her than the case I have just related, although the vomiting had not continued so long. 2nd,—The diagnosis was unusually difficult. The patient was near the age at which menstruation ceases: did not believe herself pregnant, had no other symptom but the absence of the catamenia, and the vomiting; and the attack had come on at the termination of dysentery. 3rd,—The success of the operation was perfect as regards the vomiting. She took food and drink immediately after delivery, and never vomited again. But we find that we may not defer the operation beyond a certain point without danger. When I saw this patient, she was so much reduced that she could not have lived another week, but this state of exhaustion rendered an attack of diarrhœa fatal, which might have been borne very well had she been stronger. Had I seen her sooner, I have scarcely a doubt that she would have recovered.

British Record of Obstetric Medicine, Feb. 1, 1848, *p.* 46.

128.—ON THE CAUSES OF ABORTION.

By Dr. W. Tyler Smith.

[Dr. Smith divides the causes of abortion into two classes, *excentric*, or irritation of the extremities of excitor nerves, and *centric*, or irritation of the spinal centre. Among the first or excentric causes of abortion he mentions irritation of the mammary nerves; this operates in cases of undue lactation complicated with a second pregnancy. In such cases, though the constitutional debility helps to produce the accident, yet the local irritation is a distinct cause of abortion, and may be efficient in its production when there is no particular debility. Dr. Smith observes further:]

It is curious that irritation of the stomach, between which and the uterus there is such a distinct relation, should *not* produce abortion. After parturition, the slightest gastric irritation will excite contractions of the uterus; but during pregnancy, gastric irritation, and sickness, even to death, may occur without disturbing the fœtus in utero; on the contrary, sickness seems positively favourable to the continuance of utero-gestation. The synergies between the lungs and the uterus are equally remarkable. The uterine phenomena of utero-gestation retard the progress of pulmonary disease, but if the most extensive disease of the lungs exist, it does not excite abortion. An amount of pulmonary disease sufficient to cause death a few days after delivery may exist, without any interruption to the natural duration of pregnancy.

Irritation of the *trifacial nerve* will sometimes excite abortion. It happens when no other cause can be recognised but the appearance of the dens sapientiæ, and this phase of dentition is well known to produce considerable local and constitutional disturbance. General convulsions may, in fact, be excited from this source, either in the male or female subject. The reflexion of irritation from the trifacial upon the uterine nerves, in young pregnant women, is no more remarkable than the strangury excited by teething in the infant. Extraction of decayed teeth during pregnancy is another cause of abortion in which the trifacial is concerned. There is a well known synergy between the uterine system and the teeth during pregnancy, leading to toothache and caries; and there is also a tendency to reflex action in the direction *from* the teeth *to* the uterus. These facts and their rationale require to be borne in mind in the management of pregnancy.

Irritation of the *vesical nerves* is, in rare instances, a cause of abortion, as when patients conceive who are the subjects of chronic vesical irritation, or when there is stone in the bladder. The uterus itself reflects irritation upon the bladder during pregnancy, so as to exaggerate the effects of any primary vesical irritation which may exist.

Irritation of the *ovarian nerves* is a very frequent and important cause of abortion. It is a well recognised fact, and one upon which I have often had occasion to dwell, that the majority of cases of abortion occur at what would have been menstrual periods. In such cases it is the ovarian nisus, and the attendant irritation of the ovarian nerves, either alone or combined with other causes, which excite the uterus to expel the ovum. The ovarian excitor nerves act in such cases just in the same way as they act in bringing on natural labour at the completion of the full term of pregnancy. Almost all women can perceive the menstrual periods as they pass through utero-gestation, particularly at the first three or four periodic dates. Those who have suffered from menorrhagia or dysmenorrhœa, or in whom organic ovarian disease has existed before conception, recognise the menstrual nisus most clearly, and it is precisely in these subjects that abortion is most likely to happen. Abortion in the early months is common during the grand catamenial climacteric; it constitutes, in fact, one of the chief dangers of this epoch. In all cases of abortion caused by irritation of the ovarian excitor nerves, the most common time for the occurrence of the accident is at the second, third, or fourth periods, but it may happen at any one of the periods. In cases where the abortion depends upon irritation of other excitor nerves, or upon erythismus of the spinal centre, the periodic ovarian irritation often determines the time of the accident.

Irritation of the *rectal nerves* is a common cause of abortion. This variety of abortion is obvious when the accident occurs from hæmorrhoids, or from operations for their removal; the presence of ascarides in the rectum; the employment of irritating purgatives, particularly aloes, in excess, or the use of irritant enemata, or from the occurrence of severe diarrhœa or dysentery during pregnancy: obstinate, and long continued constipation, or any other great irritation of the lower bowel and its excitor nerves, may occasion abortion.

Irritation of the *vaginal nerves* sometimes excites abortion. Plugging the vagina is one of the means resorted to for the artificial production of premature delivery; the mechanical irritation of coïtus will sometimes produce abortion, and this cause must be divided between the os uteri and the vagina. In cases of threatened abortion with hemorrhage, the danger of the accident is sometimes increased by the plugging of the vagina resorted to in order to arrest the loss of blood. This fact should always be borne in mind when the plug is resorted to in hemorrhage of any kind occurring during utero-gestation. It is possible that in arresting the hemorrhage we may ourselves cause abortion.

Irritation of the *uterine nerves* is, beyond doubt, the most important of all the causes of abortion. Abortion may occur without any other apparent disorder of the ovum or the uterus, except an absence in the uterus of the proper disposition to growth or development. The uterus will grow to a certain size, and then an arrest of development appears to take place, which ends in the expulsion of the ovum. In other cases, the fœtus dies, and becomes a foreign body, directly irritating the uterus to throw off its contents. This cause of labour involves the whole subject of intra-uterine pathology, and of all the disordered condition of the fœtus, membranes, and placenta. The separation of the membranes from the walls of the uterus, and the effusion of blood, or disease of the placenta, are important causes of abortion. Puncturing the membranes, and bringing the fœtus in direct contact with the parietes of the uterus by the evacuation of the liquor amnii, will excite abortion in the same manner. In the abortion excited by violent horse or carriage exercise, the accident depends on the mechanical irritation of the os and cervix by the fœtal head, in consequence of the succussion. In principle, the abortion caused by equestrian or carriage exercise is precisely the same as the ovi-position excited in the tipula or libellula, by shaking these insects upon rough paper. Irritation of os uteri by coïtus; the use of the plug; vascular irritation and inflammation; ulceration of the os and cervix, will, if continued, excite reflex actions of the uterus, terminating in the loss of the ovum. Another uterine source of abortion is the implantation of the placenta over the os and cervix uteri. The presence of the placenta in this abnormal situation excites the uterus from within, in the same manner as the plug from without; hence the frequency with which placenta-prævia cases terminate in premature delivery. When speaking of ovarian irritation as a cause of abortion, I mentioned that this danger was chiefly incurred during the early months of pregnancy. In placenta-prævia, on the contrary, owing to the greater development of the placenta, and the anatomical changes occurring in the os and cervix uteri as pregnancy advances, the danger of abortion in these cases increases with the duration of pregnancy. Different tumours, malignant or non-malignant, attached to the os and cervix, or to the parietes of the uterus, when they excite abortion, act after the same manner. To the long list of uterine irritations issuing in abortion, I may add injuries of the uterus itself from external violence, and inflammatory disease of the uterine tissues.

All these causes, it will be observed, whether vaginal, mammary, vesical, rectal, facial, or uterine, are purely excito-motor in their operation. The irritation is applied to the excitor nerves, and reflected through the spinal marrow upon the motor nerves and the uterus. It often occurs that two or more causes are in operation at the same time. The reflex contractions of the uterus which constitute abortion are not excited, as in the case of respiration or vomiting, immediately on the application of stimuli. If cold water be thrown upon the breast, the movements of inspiration—if the fauces are irritated, the movements of vomiting—are instantly produced. But it is not thus in the case of the uterus. Though this organ is so distinctly under the control of the spinal marrow during, and immediately after labour, so distinctly, indeed, that asperging the abdominal surface soon after delivery produces instantaneous uterine contractions, yet, during pregnancy, no reflex actions sufficient to cause abortion follow immediately upon the application of the ordinary stimuli of excito-motor action. It requires that the nervous arcs in relation with the uterus should be irritated for a considerable time, and an excitable state of the uterine nervous system is then produced, during which reflex actions are readily excited by slight causes.

The nervous arcs presiding over parturition are, to a certain extent, isolated from the rest of the spinal system. If it were not so, and if the uterus immediately obeyed an excitor stimulus like the stomach, abortion would be the rule, normal parturition the exception. There are certain facts which show this independence of the nervi-motor apparatus of ovi-expulsion in a remarkable manner. I may mention one fact and one experiment. Dupuytren relates the case of a woman who became the subject of traumatic tetanus during her pregnancy, but who, nevertheless, recovering from the tetanus, passed safely to the end of utero-gestation without abortion. A frog taken during the time the oviduct was full of ova, was rendered tetanic by strychnia for a considerable time: the ova were not expelled during the presence of tetanoid symptoms, but several days afterwards, when they had entirely disappeared, oviposition took place in the ordinary way.

All the excito-motor causes of abortion are, in fact, imitations of the ovario-excitor cause of natural parturition at the end of utero-gestation, only in many cases, instead of the ovarian nerves being the inducers of the uterine nervous excitability which terminates in premature expulsion, it is the mammary, vaginal, rectal, &c. In the instances where ovarian irritation is the cause of abortion, the cause of abortion is precisely the same, and acts in the same manner as the cause of natural labour, the only difference being that of the *time*. I have said that oftentimes more causes of abortion than one are in operation; thus uterine irritation may produce the irritability or excitability of the uterine nervous system, but before this irritability has actually produced expulsion, irritation of the rectum may step in and complete the abortion. One point I would insist on most emphatically—namely, that in cases of vesical irritation, or rectal irritation, we cannot correctly talk of the extension of nervous irritation from these organs to the uterus, by structural contiguity and continuity, or because they are supplied by nerves from the same source. Vascular phenomena may so extend from one organ to another in the same vicinity, but nervi-motor phenomena never can. There are abundant vascular anastomoses to account for such vascular phenomena, but there are no anastomoses of nervous fibrils. However close the irritation may be to the motor organ, all the motor action which does not depend upon irritation of the muscular fibre, or upon sensation or emotion, is reflex in its form. The uterine contractions of abortion caused by irritation of the rectum and bladder—nay, even of the uterus itself—is as much reflex as the contractions excited by trifacial, gastric, or mammary irritation. I insist on this point, because I frequently observe relaters of cases speaking of motor sympathies between the bladder, uterus, and rectum, as though there was some short cut between these organs, whereas there is no motor connexion or route whatever, except it be through the spinal centre, and by way of the excitor and motor nerves. In all, there is the excitor nerve, the spinal centre, and the reflex motor nerve concerned; at one end of the nervous arc there is the physical irritation, at the other, the motor contraction. As in other cases of excito-motor action, sensation may be present, but it is by no means essential. Physical irritation of the excitor surfaces, short of sensation or pain, may produce all the phenomena of abortion. This is one of the facts which renders the due recognition of all the excito-motor causes of abortion so essential to the prevention and treatment of this accident.

We may look on abortion as, in some points of view, comparable with spasmodic asthma, or any other excito-motor disease. From some irritating cause, an excitable condition of the excito-motor arcs presiding over parturition is induced, just as in the case of asthma, where it is the respiratory nervous arcs which are similarly affected. In either case, the excitability, once induced, slight causes of irritation, which in healthy subjects would produce no disturbance whatever, are sufficient to excite, in the one case, spasmodic respiration; in the other, morbid or spasmodic parturition. Besides the ordinary periodicity of abortion—namely, the tendency to premature expulsion at the catemenial dates, there is another periodicity observable in abortion, in the tendency to the occurrence of miscarriage in successive pregnancies at a particular time. It often happens that we may see in these cases the obvious physical cause of abortion developed at the special times; but in others there seems to be a habit, or periodicity, the nature of which we cannot understand.

Centric Causes of Abortion.—But besides the causes of abortion involved in physical irritation of spinal excitor nerves, there are other causes in which the circulation and the *spinal centre* are chiefly concerned. There are certain erythematic conditions of the system in which abortion is very prone to occur. These are, the exanthemata, particularly small-pox, and syphilis, in each of which a special poison is introduced into the blood; the pyrectic state of the system which obtains at the commencement of the non-specific fevers and simple inflammations of the viscera, is attended with similar danger; the scrofulous diathesis, too, has been considered as prolific of abortion as the syphilitic; but, I believe, with far less justice. The inhalation of carbonic acid rapidly excites abortion, and during accidental or intentional poisoning by this gas the ovum is often found expelled. During the celebrated razzia in Algeria, in which a great number of Arab women were suffocated in the caverns of Dahra, those of them who were pregnant were found to have aborted. Military histories offer examples of the same kind in other countries. I believe the retention of noxious elements in the blood, in the albuminuria of pregnancy, to be a cause of abortion as well as of puerperal convulsions. There are also certain specific agents, as the essential oil of savin and the ergot of rye, which, if persisted in, are adequate to cause abortion; and lastly, all the agents recognised in toxicology may cause abortion, as well as the destruction of the parent, when administered during pregnancy. In all these instances the blood is the medium by which the exciting agent is conveyed to the spinal centre. They are precisely similar to the artificial abortion which may be excited in the lower animals by direct mechanical irritation of the spinal marrow.

Another important cause of abortion, acting through the spinal centre, is *emotion*. This cause, unlike those which reach the spinal centre by the blood, is purely *psychical* in its nature. The influence of emotion in causing the uterus to evacuate its contents is as undoubted as the influence of emotion upon the stomach or upon the rectal and vaginal sphincters. But as in the case of uterine excito-motor action, ordinary emotion does not affect the uterus instantaneously. Time is required for the effects of emotion to develop themselves into uterine excitability. The rapidity with which emotion affects the uterus is proportionate to the intensity of the emotion. A violent fit of anger, serious fright, or intense grief, may lead to abortion a few days after the violence of the emotion has disappeared. During religious persecutions women have aborted suddenly at the stake; and here the emotion produced by excessive terror would probably be the chief cause of the accident. Thus emotion may, under extreme circumstances, act upon the uterus, and produce abortion, even more readily than ordinary excito-motor causes.

In the history of abortion, there has been a too general tendency to attribute the accident to some particular and almost universal cause. For instance, at one time abortion is referred almost exclusively to disease of the ovum; at another, to the strumous diathesis; at another, to disease of the os uteri: on this latter point I would be understood as not in the slightest degree undervaluing the researches of Dr. Henry Bennet, or Mr. Whitehead, of Manchester; but I contend that the study and recognition of ALL the manifold causes of abortion is necessary to the student and the practitioner.

Lancet, April 15, 1848, *p.* 409.

129.—MODE OF INDUCING PREMATURE LABOUR.

By Dr. Simpson, Edinburgh.

Dr. Simpson has latterly used conical-shaped sponge tents for opening up the os uteri, in all the cases where he has had occasion to bring on premature labour. These tents are made of sponge dipped in solution of gum arabic. and dried under very strong compression. It is necessary generally to use several tents, and the last one must sometimes be very large. It is not by any means requisite to use the speculum in introducing these tents, as has been recommended and practised in Germany; they are very easily introduced with the finger alone, or by means of a simple bent wire handle, the point of which is passed up into their larger extremity. They are easily applied—cause the patient little or no pain or mischief, and they have generally the os uteri well opened before the labour begins. He has never, in any case, seen the membranes ruptured by them before the commencement of labour. And he believes that the preservation of the membranes was a matter of the first moment in regard to securing the preservation of the child. Dr. Hamilton had preserved the membranes, and saved fifty out of fifty-seven children; Dr. Meriman had ruptured the membranes, and saved twenty-three out of forty-one children. Dr. Simpson had noticed lately a proposal to induce labour by injecting water between the membranes and the uterus, in order to separate them. He considered this would be a dangerous practice, as the placenta might be separated as well as the membranes, and hemorrhage consequently ensue.

Monthly Journal, March 1848 *p.* 694.

130.—*Note on Abortion.*—By Dr. Radford.—The finger must never be introduced within the os uteri during the early periods of abortion; indeed the length of the cervix offers an insurmountable obstacle to its coming into contact with the ovum, and the attempt cannot be made without great hazard. The body of the uterus is also changed by the abortive process, so that its tangible characters, presented to the finger, are very different to those of the same part, when in a normal gravid state, at the same date. It is found to be enlarged, in consequence of, and in proportion to, the addition it has received from the expansion of the cervix: by this alteration it loses its abrupt angle, and assumes one which is more obtuse, which continues to increase until the organ has acquired what has before been mentioned, an oviform figure; and no line of demarcation or difference can be traced to point out the artificial division of the organ. These changes are not always produced in the same time; in some cases they are rapidly effected, but in others a considerable time elapses before they are accomplished. Several very important inferences may be drawn from the above observations, but I shall leave them to be made by the reader himself, with this single exception, that, if after a careful exploration, we ascertain that the figure, length, and thickness of the cervix uteri are normal, it is our duty to adopt every means calculated to preserve the ovum, and thus subdue the symptoms: but, on the contrary, if we discover that it is shortened, either partially or entirely distended, and that the organ has assumed, more or less, the oviform shape, we should assist, by all proper means, the expulsive action, whilst, at the same time, we pay proper attention to those contingent circumstances which are attended with danger.

British Record, March 1, 1848, *p.* 81.

131.—ON STERILITY.

By Dr. E. RIGBY, Lecturer on Midwifery at St. Bartholomew's Hospital, &c.

[In the Medical Times we have a series of Reports on the Diseases of Females, by Dr. Rigby, from which we take the following interesting remarks on "Sterility:"—]

In proceeding, says he, with the subject of *organic sterility*, I come next to consider those cases which are of a less aggravated sort, viz., where the os and cervix uteri are well formed, but *so contracted as* to prevent the occurrence of conception. This condition is occasionally attended with a swollen state of the anterior lip, and disposition to congestion of the part; the cervix feels hard and tense, and the mucous membrane covering the os is considerably gorged, and more or less studded with granulations, which soon lead to ulceration, The patient complains of pain in the back and loins, sense of bearing down, and many of the symptoms which characterize slight inflammatory action of the cervix uteri and ovary. She has pain on suddenly sitting down upon a hard seat, and on the passage of solid fæces, occasionally darting pains; frequent and sometimes severe pain in one or other ovarian regions, usually the left, and more or less leucorrhœa; with these local annoyances there is considerable derangement of the stomach, liver, and bowels; the tongue is dry and rough, being covered with that peculiar short-napped fur (if I may so express myself) which indicates a state of irritation, especially of the uterine system, in the female; the secretions are faulty; the pulse is weak; the catamenia irregular in time, quantity, and quality, and generally preceded by much suffering. Mere dilatation of the os and cervical canal will frequently produce much relief to all the local symptoms, and as the general irritation resulting from their presence subsides, the health and strength improve rapidly. If, however, the contraction of these parts be very considerable, the dilatation produced by a tent is but of temporary effect; even wearing a metallic plug in the canal for some weeks does not always succeed in producing a dilatation of any permanence, and after a short interval the parts are found as contracted as ever; under such circumstances the division of the anterior lip of the os uteri and corresponding portion of the cervical canal becomes necessary, and is of course a very effective measure. The following case ought, perhaps, (from the patient being a single woman,) to come rather under the head of dysmenorrhœa than that of sterility, but, being a good illustration of the foregoing observations, I will venture to introduce it here.

S. K., aged 23, unmarried, delicately formed.

June 20, 1846. Complains of dragging pain in the loins, and pain of a lancinating character in the hypogastrium, extending to the thighs. Bowels costive; appetite bad; tongue furred and rough; has pain in the direction of the rectum.

Exam. per Vaginam.—Os uteri low down and tender; uterine sound passed two inches and three quarters towards the left side; menstruated at seventeen, and has continued to do so regularly ever since, except after the first appearance, when it was entirely absent for ten months. She has always suffered severe pain for several days before each period, which is relieved by the appearance of the discharge; the discharge is quite natural.

[Tonics and alteratives were given internally, the os uteri scarified and nitrate of silver applied to it, and metallic tents used to dilate the orifice. For a time she was much relieved, but the symptoms returned; and in about fifteen months after the date of the first report, Dr. Rigby tells us,—]

Finding that her former symptoms were fast returning, and that the relief obtained by the metallic tent was but temporary, I admitted her into the hospital for women in Red Lion square, and divided the anterior wall of the cervix and lip of the os uteri; a metallic tent of the same size as before was introduced whilst the wound healed, so as to render the canal permanently open; and, after remaining in the hospital a fortnight, she left, being anxious to resume her work, on which she is entirely dependent.

Jan. 10, 1848. Has worn the tent until now, which is very much longer than I had intended her to do; is well in health; has lost the bearing down, and the catamenia have appeared healthily, and without pain.

16. Has worn the tent ten weeks; is much improved in health; the tent was removed.

In reviewing the history of this case, we find that its prominent features are those which indicate subacute inflammatory action of the os and cervix uteri, producing considerable irritation of the neighbouring viscera, derangement of the digestive organs, and much disturbance of the general health. Dysmenorrhœa to a severe extent also existed, and evidently resulted from the very narrow canal of the cervix and small os uteri obstructing the discharge of the catamenia from the cavity of the uterus. The cavity itself had become enlarged by frequent distention at the catamenial periods, as indicated by the measurement of the sound—viz., two inches and three-quarters instead of two inches and a half; to which circumstance may also be attributed the inclination which it manifested towards the left side. I at first treated her merely for the prominent symptoms, hoping that, if I relieved the inflamed condition of the os and cervix, and attended to the general health, she would soon improve; and, being unmarried, I was unwilling to subject her to any local treatment beyond the application of leeches to the anus; these relieved her only for a while, and I soon found that I was making but little progress. The condition of the os uteri was, therefore, examined more accurately, and, being ascertained to be congested and granular, it was touched with nitrate of silver. The tongue and state of the bowels indicated also so much irritation of the intestinal mucous membrane that I was unwilling to give mercury, although the liver was inactive, and hoped to relieve the one and rouse the other by the combination of lime-water and taraxacum. I know of few medicinal agents to equal these in such cases, for there can be little doubt that mercury frequently increases the irritable state of the mucous membrane, and, if carried far enough, will even pave the way to actual ulceration. The caustic produced considerable relief for a while; but at a subsequent examination the os uteri was found so congested as to require scarification, which produced a free discharge of blood, and was followed by a greater degree of relief than she had yet experienced; still, however, the state of the tongue was far from satisfactory, and after a time her former pains returned. The scarification was repeated twice more, and with great relief; the general health improved, the catamenial periods became more healthy; still, however, some symptoms (lancinating pains, for instance,) continued unremoved, even when the effects of the treatment were most successful; and feeling that I could only bring her up to a certain degree of health, and with difficulty keep her there, and having on many occasions found that I could stop the inflammatory action, which so frequently accompanies these cases of contracted os and cervix uteri in irritable habits, by temporary dilatation, I passed a smooth metallic tent into the canal of the cervix; the introduction was attended with considerable pain; but this abated quickly, and she then felt a more complete and lasting relief than she had hitherto experienced. The general health improved; the catamenia came without the usual precursory suffering, and I felt convinced that in removing the contracted state of the os and cervix uteri, I had removed one, if not *the* great, cause of irritation upon which her symptoms depended. Still the disposition to inflammatory action in these parts was evidently not entirely subdued; the former symptoms began gradually to return, the health to suffer, and in the course of two months the os uteri was found as contracted as at first. A metallic tent was again introduced, and this, as on the former occasion, was attended with the same general relief and improvement of health. After wearing it ten weeks it was removed, and she continued to enjoy good health for four months, although it was but too evident that some of her old symptoms were beginning to return; in about a month more they had rapidly increased, and, feeling more than ever convinced from this second trial that permanent dilatation would be the only chance of permanent cure, I determined to divide the anterior wall of the cervix. It might have been more prudent to have waited a little longer to see the results, but, as I propose to lay before your readers some similar cases of much longer standing in my next report, I have detailed this one first, as it appeared best fitted for illustrating my subject.

Medical Times, Jan. 22, 1848, *p.* 272.

[Dr. Rigby then relates the following case of organic sterility. The patient was 29 years old, and had been married eighteen months: she complained of constant uneasiness and pain at the lower part of the back, increased by the passage of hard fæces. She had always been the subject of menstrual irregularities, and appeared to have had inflammation of the cervix uteri about a year before. On October 20th, 1846, Dr. Rigby made an]

Examination per Vaginam.—Os externum and vagina very small; from which reason, and from the os uteri being so high up, it is reached with some difficulty; it is situated rather forwards, very small, nearly closed, and somewhat tender. The end of the cervix is so covered with a fringe of fibrinous excrescences, like minute polypi, that it is not easy to detect the os uteri at first. The upper extremity of the vagina is contracted and puckered, as if cicatrized. The uterine sound was introduced with much difficulty, and would not pass beyond the os uteri internum. I, therefore, introduced the dilator, and dilated slightly; on closing its blades, the instrument passed immediately into the cavity of the uterus; on introducing the sound, it passed to the extent of nearly three inches, and somewhat to the right, on introducing the speculum, which was done with much difficulty, owing to the contracted state of the os externum and vagina, the abovementioned little excrescences could be seen. The os uteri was livid, cicatrized, and granular; a slight bloody discharge was flowing from the os uteri. Applic. argenti nitras ori uteri.

[Alterative and tonic medicines were ordered. The next report is on]

Nov. 10. Returned to town a few days ago, and I examined the os uteri with the speculum; it was more healthy. I applied the argenti nit. once more. Yesterday, after a little dilatation, I passed a taper sponge-tent, but to-day I find it has been of no use, having been dislodged by her cough. Dilated again to-day, and introduced a smooth metallic tent; the rough, cicatrized condition of the canal of the cervix was quite perceptible as it passed. Rep. med.

16. The metallic tent has been retained until yesterday, when it came away. The catamenia have come on.

20. The catamenia appeared on the 14th with slight pain; she had a little more pain the next day, but nothing like what she used to have. The discharge was natural in colour and quantity; no

coagula. None of the upper pain of back. The lower or sacral pain seems connected with a hemorrhoidal diathesis, and confined bowels; says that quinine confines the bowels. I dilated the os uteri somewhat, and then passed a much larger metallic tent. Extr. taraxaci om. nocte; sulphur, precip. et magnes. carb. o.m.

Dec. 9. The tent slipped out last week, and she returned to town. The os uteri was still small; its lips very uneven from the above-mentioned little excrescences. I dilated it again, and passed a still larger tent; it produced great irritation at first, with vomiting and pain for some hours, which were relieved by hot semicupium, &c. Rep.

16. After wearing the tent a few days it slipped out, when the catamenia came on. I did not reintroduce it, as the canal of the cervix so quickly recovers its former contracted state. She has improved considerably in general health, so that in a month or so I will divide the cervix.

Sept. 3, 1847. I divided the anterior wall of the cervix early in January, and she wore the metallic tent for a fortnight, until the incision was healed, without inconvenience. She writes to-day, giving a favourable account of herself—"Much better than I have been ever since I married," and "I am much stronger, and feel more *really well*, upon the whole."

[Jan. 6, 1848. She was reported to be in the fourth month of pregnancy. Dr. Rigby observes upon this case—]

The permanency of the effects produced on the os and cervix by wearing a metallic plug or tent, are variable: in some cases the part remains dilated for some little time, and now and then appears to continue so; but in many, as in the present case, it contracts immediately after the removal of the tent, and quickly returns to its former condition. The case which I have given in my previous report is in this respect very similar. As the metallic tents were expelled each time that the catamenia came on, we may, I think, infer that the uterus possessed a fair amount of contractile power, and that, therefore, the obstruction to the discharge of the catamenia from the nearly closed condition of the canal must have been very considerable. The termination of the case in pregnancy is what I had scarcely hoped for—the general debility and haggard appearance, the long history of previous ill health, and the unfavourable state of the uterus for conception, prevented any expectations of such an event; but after removing this constant source of annoyance and irritation to the system by dividing the cervix, and thus effecting a permanent dilatation of its canal, the health began rapidly to improve; and this favourable state was probably still further promoted by a change of residence to another part of England.

Medical Times, Feb. 12, 1848, *p.* 324.

[Dr. Rigby next proceeds to consider sterility arising from functional derangement. Acute and chronic inflammations of the ovary, which Dr. Rigby has shown to be causes of dysmenorrhœa and menorrhagia, are, he says, frequent causes of sterility.

Dr. R relates the case of a lady, mother of eight children, who, he says, after suckling her last child for fifteen months, became the subject of menorrhagia, with pelvic pains, anæmic headache, &c. The following is his account of the case :—]

Examination per Vaginam.—Uterus somewhat retroverted, so that the sound passes backwards. In the recto-vaginal pouch a tumour can be felt as large as a walnut, soft and excruciatingly tender when touched. The point of the sound does not pass into this tumour, (which would be the case if it were the fundus uteri,) although the sound passes through the os uteri rather beyond the usual distance; nor does the tumour move until the fundus uteri is carried upwards and forwards to its full extent, and then it rises only a little.

Examination per rectum shows the same mass in the recto-vaginal sac, and the point of the sound evidently in front of it; it is evidently the left ovary displaced and much inflamed. Hirud. vi. ovario sinistro.

℞. Pil hydrarg. gr. iij.; ferri sulph., gr. ij.; ext. coloc. co. gr. v. M. ft. pil. ij. o.n.

℞. Acidi hydrochlor. dil., acidi nitrici dil., aa. ʒj.; infus. gentianæ co., infus. sennæ co., aa. ℥iv. M. ft. mist. cujus sumat. cochl. magna. ij. bis die.

25. Leeches were not applied; is much better in health; the pains of which she complained are much less.

Examination per Vaginam.—Pressure at the posterior part of the vagina on the left side still excites pain, but nothing like what it did the last time; the uterine sound again passes backward; the posterior wall of the uterus appears thickened, but this is not at all tender.

Examination per Rectum.—The swelling which I before felt in the recto-vaginal sac is greatly diminished, although still tender.

This tonic and alterative plan of treatment was continued, with a little alteration in the medicines employed; and in three months afterwards she was again examined.

Examination per Vaginam.—Uterus still somewhat retroverted, but on restoring it to its natural position the tumour can no longer be felt in the recto-vaginal sac, as before, but the left ovary can just be reached in the usual direction, and is intensely tender to the touch; slight pressure upon it also produces the pain in the left groin. Let her apply the antimonial ointment to the painful spot in the ovarian region.

July 27. Is considerably advanced in pregnancy. Health tolerably good; bowels confined. Rep. haust. rhæi c., mannâ, &c.

Oct. 1. Was safely delivered yesterday of a female child.

Experience proves that abortion is one of the most common causes of oophoritis, and, from the injury which the general health usually suffers on such an occasion, this inflammation is very apt to continue for some time, and assume a chronic form; the exacerbations of irritability and congestion which it undergoes at the menstrual periods, tend to aggravate this condition, and render it, in its turn, the cause of other affections, or even lay the foundation of organic disease. The symptoms of oophoritis, although by no means minutely given, are tolerably decisive. The pain in the left groin, and on sitting down suddenly, and the results of examination, place the latter beyond doubt; the presence of a tumour in the recto-vaginal sac, intensely tender to the slightest touch, is very characteristic of the ovary. I know of no other circumstances during examination per rectum or per vaginam where such utterly unbearable pain is produced by the slightest touch of the finger; and the manifestation of such suffering, when investigating the condition of the recto-vaginal sac, is of itself strong evidence that ovarian inflammation exists In the present case, the great value of Dr. J. Y. Simpson's uterine sound was strikingly shown, for not only did it enable me to discover the presence of a partial degree of retroversion, but, by raising the fundus uteri into its natural position, I could ascertain with perfect certainty that the painful tumour in the recto-vaginal sac was not the retroverted fundus, but the ovary. The displacement and inflammation of the ovary in cases of retroversion of the uterus, is a subject which requires further investigation: they exist in very various degrees, and, although the inflammation can exist without much displacement, the reverse can never obtain; indeed, so frequently do we see an irritable or inflammatory condition of the ovary attend retroversion of the uterus, that I cannot feel certain of being correct in pronouncing the abortion to have been directly the cause of the oophoritis here, but rather the retroversion, which, on its part, had been produced by the flaccid condition in which the uterus had been left after the expulsion of the ovum.

There can be no doubt that retroversion of the uterus, in the unimpregnated state, especially where of some standing, is quite capable of causing ovarian inflammation; the strain on the broad ligaments, and consequent obstruction to the returning circulation of the ovary, producing considerable engorgement of this organ. This effect, however, varies very much in different cases of retroversion: in some it is very severe, as in the present instance; in others, of long standing, not the smallest trace of ovarian suffering is manifested: these latter, I must own, are rather the exceptions to the rule. By far the most painful ovarian affection, in connexion with retroversion, is the descent of the gland into the recto-vaginal sac: the congestion of the ovary is necessarily much increased, it becomes much swollen and most excruciatingly painful. I have known it become as large as a small orange, the passage of fæces and every movement of the body being attended with fearful suffering, and on one occasion general peritonitis. Another result of oophoritis thus produced is severe menorrhagia, of which I have given a remarkable case (Feb. 15, 1845.) A very severe case of this sort occurred to me a few months ago, at some distance from London, where the extent of the flooding had produced a dangerous state of exhaustion; the uterus was retroverted, and the left ovary considerably inflamed; the continued recurrence of profuse menorrhagia from the slightest cause put all thoughts of mechanical support out of the question; it was equally impossible to relieve the oophoritis by local depletion—firstly, because the cause of it (the retroversion) would be still in full force; and secondly, because the state of anemia (already becoming dangerous) absolutely forbade the attempt. I therefore directed the patient to use the prone position (by means of a large box on which a mattress, &c., were placed,) and thus dispose the fundus uteri to incline forward by its own weight. The result was most successful: the hemorrhage ceased; the ovarian pain subsided; strength returned; and, under the able management of my friend, Mr. F. Elkington, of Birmingham, the uterine supporter was applied with the best results.

The effect of oophoritis in producing menorrhagia is a very interesting subject, and deserves careful attention, for there is scarcely any form of menorrhagia so severe as this, and, unless the real cause be detected, none more obstinate and difficult to treat.

Medical Times, March 25, 1848, *p.* 421.

132.—ON UTERINE HÆMORRHAGE.

By W. Newnham, Esq , Farnham.

[The *active* and *passive* forms of uterine hæmorrhage may be distinguished, Mr. Newnham remarks, as far as practical purposes are concerned, by the quantity of blood lost in a given time. Of the causes of hæmorrhage from the uterus, Mr. N. observes:]

There are other properties of the uterine economy, which render it especially liable to hæmorrhage, besides its excessive vascularity; as for instance, its great elasticity and contractility—the former admitting the very large development of its vessels, and consequent weakening of their parietes—while the latter is required to make the necessary pressure upon them, in order to assist in stopping their bleeding mouths. It is most desirable that these properties be borne in mind, because they have a material bearing upon many points of after-treatment.

Another circumstance which materially promotes this tendency to hæmorrhage, is the absence of valves in the uterine veins. It is obvious, that the absence of valves must favour the profuseness of the bleeding, and must add to the paramount importance of securing *coagulation* to stop the mouths of the bleeding vessels: this should form one of the *principles* for the treatment of uterine hæmorrhage.

Again, it is to be recollected, that the capillary or exhalent arteries of the uterine system are very numerous—that they are distributed over the entire internal surface of the uterus, and that they terminate in minute orifices which always exhale a certain amount of secretion, and occasionally, or rather periodically, the menstrual fluid. Hence, another *principle* in the treatment of uterine hæmorrhage will be, *the diminution of arterial action*, this being directed by a knowledge of the source from which such action is derived, always recollecting that action and power are not coincident, and that the increased action may be dependent upon a want of power to control it.

British Record, March 1, 1848, *p.* 91.

In the early months, abortion being threatened, and the expulsion of the fœtus having occurred—the placenta being retained, it is always to be recollected, that the hand cannot be carried into the uterine cavity,—this, therefore, being out of the question, the hæmorrhage will then become very moderate; and yet, notwithstanding, the attendant is not to be lulled into a fatal security, since it may recur at any moment when the separation of the placenta has commenced. In such cases, if there be nothing urgent in the symptoms, nature may be left to herself for twenty-four hours, but if after this time, the placenta has not been expelled, it will become necessary to inquire into the cause of its detention. For this purpose the hand must be introduced into the vagina, in order precisely to ascertain the nature of the case. If it be found that the os uteri is open, but that there is no trace of placenta, the exploration must not be carried further; no violence must be done to the uterus; the case must be left to nature,—an aperient should be exhibited, or a large lavement should be given—and the case may be left for another twenty-four hours.

But if in conducting this examination, it is found that the placenta is partially expelled, and actually occupying the mouth of the womb, or that it is lying within its undeveloped neck, within reach of the finger, it may be attempted to be gently withdrawn by one finger introduced within the uterine cavity, or by a finger and thumb antagonistically employed in the vagina. And if the extraction of the placenta be not thus easily accomplished, recourse may be had advantageously to the little forceps so admirably adapted to this purpose, and recommended by Dr. Radford of Manchester, which will be found efficient and useful;—at any rate this case is not to be abandoned to nature!—the practitioner's energies are not to slumber till they have provided for the patient's security—or in other words, till the placenta has been judiciously and carefully removed. In all these cases, the determination of the time for interference must be guided by the previous history and precise nature of the case, and by considering the patient's powers, and the peculiarities of her constitution, particularly with regard to hæmorrhagic tendency, or to the existence of any organic malady.

Not so with respect to retained placenta after the birth of a fœtus at its full term. Here to leave the work to nature would be criminal; and the accoucheur is never to quit his patient's bedside till it be accomplished. Usually the placenta will be expelled in a few minutes; its first detachment is easily known by the lengthening of the cord, and then it will very generally be found occupying the vagina. In this case, however, it will sometimes happen, that the placenta has been mainly separated, but that it remains attached by a small portion of its surface. If, as occasionally occurs, the placenta is of an unusually soft structure, great care will be required to remove the whole, and there will be much risk, lest the larger part should be detached, and a small adherent portion should be left behind. But perhaps pain is altogether suspended, and the uterus does not contract upon its contents so as to effect the separation: in this case a dose of opium is the best remedy.

Again, there may be a great deal of pain, and the uterus may contract a great deal, but does not expel the placenta, because it is implanted abnormally,—or it contracts spasmodically either at its orifice or in its middle, forming hour-glass contraction; and the placenta may be actually detached, and lying in one or other of these compartments. Here a full opiate is to be exhibited, and when its effect may be supposed to have been produced, the hand is to be passed into the uterine cavity. If the spasm has subsided, the enclosed or adherent placenta may be discovered; if merely retained, it may be carefully and easily removed; on the other hand, if adherent, the placenta may be gently separated, and then allowed to be expelled by uterine contraction, with the hand in the vagina. All this will be easily effected, if timely and gently manipulated.

[With regard to the general treatment of uterine hæmorrhage, Mr. Newnham observes:]

It is a very common practice to exhibit the mineral acids—alum, gallic acid; and in cases of chronic hæmorrhage, these remedies may be employed with signal advantage; but in the active hæmorrhage to which our observations chiefly are addressed, they do not appear to exert any influence which can be relied upon; and great care should be taken that they be not trusted to, for by such confidence, we shall be losing sight of the more important agents.

We must here notice the exhibition of the ergot of rye,—a remedy concerning which mistakes are constantly made,—and the employment of which requires much care and discrimination. It is not my intention to discuss its *modus operandi:* certain it is, that it has an astonishing influence, when judiciously administered, in augmenting feeble uterine contraction; and nobody can have witnessed its unerring agency without being convinced of its power.

Hence, it has been highly vaunted as a remedy in uterine hæmorrhage, and under certain circumstances, it is unquestionably useful; but these circumstances are limited. It has been supposed to possess the power of checking hæmorrhage, and therefore it has been given in all sorts of bleedings. My firm conviction is, that it is perfectly inert when administered with this intention, and that if the production of the state of ergotism have any influence at all over hæmorrhage in general, it is by so poisoning the blood, as to diminish its vitalising influence, and thus checking its morbid flow, by decreasing the action of the heart upon its poisoned contents.

The only real good which the ergot can produce, is by *increasing* languid action of the uterus. I say, *increasing languid action*, because this it will never fail to do, when given judiciously. But it has been given to produce action of the uterus, and in this it will be found to fail repeatedly. It is not its locus standi to produce action where no action previously exists, but to increase the strength and frequency of pain, where pain already exists. Often and often have practitioners told me of their having tried ergot without any effect; and doubtless, because they have exhibited the remedy without thought, as mere routinists, without a principled application of its powers. Ergot is not to be administered to produce uterine action, nor to check hæmorrhage, but to add to the power of feeble uterine contraction.

Again, its exhibition is limited under many circumstances of uterine hæmorrhage in the latter months, not only by the fact of there being no uterine contraction, but even where there is feeble contraction, and there may be present co-existingly, the necessity, or the probable necessity for turning. No man in his senses would think of giving ergot where there was a probability of his being called upon to alter the position of the fœtus.

Again, it should at all times be very cautiously given when there is a *known* tendency to uterine inertia, and hæmorrhage after delivery; for the uterus having been violently stimulated to expel the fœtus, often falls immediately afterwards into a state of atony, and fearful hæmorrhage may be the consequence. A dose of ergot exhibited immediately *after* the fœtal birth, may in such a case be oftentimes useful, and may prevent hæmorrhage by causing rapid uterine contraction, and the expulsion of the placenta.

The exhibition of this remedy, therefore, will be useless in cases of threatened abortion, until the expulsive pains have actually set in; it will be useless in all cases where the expulsive nisus is wanting; it will be useless in all cases requiring turning; and it will only be useful in aiding feeble uterine action already established, though languidly.

Plug.—It may be sometimes useful thoroughly to plug the vagina in cases of uterine hæmorrhage, in order to facilitate the formation of a clot upon the mouths of the patent vessels, and thus to assist in arresting the hæmorrhage. But even here, there are cautions to be observed. Doubtless the employment of the plug can be traced back to the very earliest periods of obstetrical science; and in all probability the astringent pessary of Hippocrates must be considered in no other light than as a *plug*.

In the early months of pregnancy, when there is threatened abortion, and the uterus is rigid, and will not yield to any trifling opposition to the flow of blood; or when hæmorrhage occurs from placenta prævia before the mouth of the womb is dilated or dilatable, then the plug may be employed with signal advantage.

But in the other formidable cases of uterine hæmorrhage in the latter months, it will be better not to employ the plug, where there is any danger of internal hæmorrhage going on unperceived, because the blood will not readily find its way out by the os uteri. In such a case, hæmorrhage which is formidable, but manageable, will be converted into a far more threatening condition, and perhaps may very speedily terminate existence. In all such cases, if the hæmorrhage be dependent upon accidental separation of the decidua, it is best to rupture the membranes, and leave the rest to nature; but in those cases of placenta prævia which will require turning it will be better to turn as soon as the os uteri is dilated or dilatable. Thus, the employment of the plug, however valuable in itself, is limited in its sphere of application, and will inevitably do mischief if applied indiscriminately. It has been said, that there is no risk in employing the plug, so long as the os uteri is rigid; but this is a mistake. The os uteri may be *rigid* while other fibres of the uterine body may be inert and yielding—and thus the greatest evil may be produced without our being aware of its presence.*

The *super-acetate of lead*, and *gallic acid*, are both of them occasionally useful in uterine hæmorrhage, but must not be relied upon with too great confidence. Nevertheless, these remedies are not to be rejected, but only to be considered as greatly inferior to

Opium. It is not perhaps every case of uterine hæmorrhage in which we would recommend the exhibition of opium, because there may be instances of plethoric constitution, in which the remedy might be useless and even injurious. But in every case of formidable bleeding the pulse is so rapidly sunk, and exhaustion sets in with such awful haste, and the pulse so soon becomes quick from irritability, and the nervous system gets disturbed, and unconquerable restlessness sets in, and the symptoms arising from the emptiness rather than the fullness of vessels are so prominent, that it is then we especially need the supporting influence of opium; it is then we shall find it as our *main point d'appui;* it is then we shall find it our stronghold, eminently worthy of confidence, and that which will carry our patient through dangers of the most appalling character.

We are not prepared to say in what way opium contributes its supporting influence to the vis vitæ, whether by its direct agency in soothing the irritated nervous system, or by producing that artificial fulness of the cerebral vessels which preserves the vascular system from sinking, till other means have been timely employed; or whether by a controlling influence over the flow of blood; we will not take upon us to decide these questions. Suffice it to say, that the influence upon the patient is most marked, her jactitation is removed, sickness quieted, hæmorrhage lessened, cheerfulness augmented, pains relieved, apprehension and despondency gone, heart enabled to carry on its function, and generally the patient is rescued from despair to hope, from the shadowy border which separates life from death to the terra firma of convalescence.

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* [We think Mr. Newnham is here mistaken—if the reader will refer to Retrospect, Vol. XV., p. 335, he will find our reason for dissenting from this opinion.—Ed.]

To secure these effects an ordinary dose of laudanum will not suffice, or a single dose, however large; it must be given in the first instance as a dose preeminently large, and this must be frequently repeated, so as to keep hæmorrhage in check and support the vis vitæ, while other means may be employed. There is nothing to fear from large doses under these circumstances; they will not produce a narcotic effect, while their influence in supporting power is undeniable. Of the employment of galvanism on the one hand, or chloroform on the other, in the treatment of uterine hæmorrhage, I have not sufficient experience to venture an opinion.

British Record, May 1, 1848, *p.* 149.

133.—ON PLACENTAL PRESENTATIONS.

[On this important subject, we have had lately several additional important papers and cases, which we subjoin.]

Dr. Woodhead met lately with the following abnormal expulsion of the placentæ in a case of twins. After the birth of the first child, the second presented naturally. When the membranes ruptured, a considerable quantity of blood escaped along with the water. On making an immediate examination, Dr. Woodhead found a placenta lying in the passages, on removing which he found it to be that of the infant still within the uterus. As the bleeding did not continue, he left the infant to be expelled by the uterine contractions. It was not born till twenty minutes after the placenta had come away; but, although still-born, it revived on the ordinary means being used, and it has continued to do well. The placenta of the first infant came away afterwards in the usual manner.

Dr. Simpson observed, that cases like Mr. Woodhead's were strongly illustrative of the curious pathological fact, that *complete* detachment of the placenta was accompanied by little or no hemorrhage; whilst the *partial* detachment of the placenta almost inevitably gave rise to severe and dangerous flooding. He cited different instances of complications in twin-births illustrative of this obstetric law, as for example the following,—

1. When, after the birth of the first child in twins, the placenta of that child is accidentally expelled and removed, the other retained infant and placenta generally remain in utero without flooding. Mauriceau, Denman, Cazeaux, &c., had stated, that under such circumstances flooding must necessarily occur, but the fact was—it did not, its non-occurrence being in obedience to the

general law, that when the detachment of the placenta is complete, there is little or no tendency whatever to any attendant hemorrhage. Dr. Simpson cited cases from Dr. Collins' treatise illustrative of this, and mentioned others of the same kind which had been communicated to him by Dr. Dawson, Dr. Dickson, Dr. Campbell, &c. "Thus" writes Dr. Dawson of Newcastle, "I have seen two cases of twins, where the placenta of the first came away before the birth of the second child. There was no hemorrhage in either case. Mr. Lang (Mr. Dawson adds) has met with two cases of this description, and also without hemorrhage;" But,

2. When, after the birth of the first child in twins, the placenta of the second child is accidently expelled, and an infant and placenta yet remain in utero, still there is generally no attendant flooding. Mr. Woodhead's case was an illustration of this. A case of the same kind had been related to Dr. Simpson by Dr. Andrews, lecturer on midwifery at the Westmininster School, London. One of Dr. Andrew's pupils was in attendance. A placenta was expelled after the birth of the first child. Little or no hemorrhage occurred till the second infant was born. Some time afterwards, it was found that the previously expelled placenta belonged to it, and the still retained placenta belonged to the child that had been first born. Here, in a case of twins, there was a child and a placenta remaining in utero; but the remaining placenta was not the placenta of that child. And the placenta which was previously detached and separated, had necessarily torn assunder the bag of membranes, leaving the portion of the uterine surface, to which it was itself affixed, exposed, without the exposure leading to any marked degree of hemorrhage.

3. In twins, between the birth of the first and of the second child, the two separate or double placentæ belonging to both are occasionally expelled, and no hemorrhage follows, although there is one child still retained in utero. Dr. Dewar of Dunfermline had reported two cases of this kind to Dr. Simpson. In one "the placentæ were firmly united, and were discharged after the birth of the first child. There was *no* unnatural discharge of blood. The mother did well." In the second case, "the mother had borne several children. The first child (which was at the full time) presented by the feet, and immediately after its birth, the two placentæ, connected by a membraneous but not vascular band, were expelled. Labour followed briskly, and, in little more than five minutes, the second child, which presented naturally, was born *The hemorrhage* (Dr. Dewar adds) *was very slight*, and not greater than what occurs after some ordinary labours. The mother did well." It may be considered that in these two cases, the interval between the expulsion of the placenta and the birth of the child, was too brief to allow accurate observations to be made upon the degree of existing hemorrhage. This objection is answered by a third case of the same kind, mentioned to Dr. Simpson by Dr Protheroe Smith of London. "I was (he writes) called to a patient some time since, who had given birth to one child, immedi-

ately after which a large double placenta followed without hemorrhage, leaving a second child in utero, which was expelled, dead of course, *three or four hours afterwards, without further discharge of blood.*" Dr. Tyler published, two years ago, a similar case in *The American Journal of the Medical Sciences* for October 1843. After the birth of the first child, a double placenta was discharged. Two hours afterwards, the shoulder of the second child was found presenting, and the uterus in a state of "hour-glass contraction." Many unsuccessful efforts to turn the fœetus were made. At last its thorax was evacuated, and the breach brought down. The mother made a good recovery. "Here (observes Dr. Tyler) we have a case not merely of simple placenta prævia, but a double surface exposed, there having been two placentæ; the fibres of the womb, first, in a state of rigid contraction; then the irritation consequent upon the performance of the embryotomy: and lastly, a state of excessive relaxation, *and still not a drop of hemorrhage*, and the female entirely recovered."

Monthly Journal, March, 1848, *p.* 692.

[Dr. Waller, of St. Thomas's Hospital, states that he entered upon this inquiry with a strong prejudice against the plan of treatment recommended by Professor Simpson, it being contrary equally to what he had been taught and what he was teaching. He says,]

The causes of hemorrhage during the pregnant state, whether it take place in the early or latter months, before or after the birth of the child, are the same, and they are twofold:—

1. A separation of the ovum, partial or more complete, from its attachment to the uterus; and
2. A want of due contraction in the muscular fibres of that organ.

If the connexion be perfect, the integrity of the circulation is preserved, and no blood can make its escape; but if there be any detachment, whether accidental or unavoidable, and the second condition above referred to be present, then the open mouths of vessels are exposed both on the uterine and placental surface, and blood must necessarily escape unless such orifices be closed again; and every practitioner knows that this much-to-be-desired effect can only with certainty be produced by the excitation of regular, persistent, and universal contraction of the uterine fibres surrounding these vessels, which, when in due action, form a very perfect tourniquet.

Professor Simpson believes that in cases of uterine hemorrhage, resulting from placenta prævia, the blood which is issuing forth does not proceed from the open orifices of the uterine sinuses, but from the detached surface of the placenta; and hence, naturally enough, concluded that by a complete separation of the after-birth, the circulation (maternal) through it would be arrested. and the bleeding of necessity cease. He made the trial in a great number of cases, and the result, as stated by him, was most satisfactory,—the bleeding *did* cease. Two questions presented themselves to my mind in the prosecution of the inquiry:—

1. Will the bleeding be arrested by the complete removal of the placenta from its connection with the uterus? and

2 Is Professor Simpson's explanation of this fact (if it be one) satisfactory?

I put the practical question first, because, if it be not answered in the affirmative, there is an end of the affair altogether; if, however, its truth be established, then is the second question of comparatively minor importance, inasmuch as I am not justified in rejecting the fact because I may not accord with certain views brought forward in explanation. Again, this point may be easily determined, as opportunities are perpetually occurring in which the efficiency of the proposed plan may be tested; and thus by the united experience of the profession an accurate judgment might soon be formed. I have carefully examined my records of cases of placental presentations, and I find that the mortality has been greater than I had anticipated.*

Case 5.—Nearly complete placental presentation occurring between the sixth and seventh month of pregnancy. The labour proceeded slowly, and after the discharge of the liquor amnii, the practitioner was alarmed at a sudden and rather profuse gush of blood, and, therefore, requested me to meet him in consultation. On examination, I found the placenta attached nearly to the whole circumference of the os uteri, the hemorrhage trifling, the uterus firmly contracted around the body of the child, and the female in good condition. There was here no necessity for manual interference; in a short time the pains strengthened, the placenta was expelled, and soon followed by the fœtus, which was extruded in a doubled position, it having been a presentation of the back. There was no hemorrhage. Mother recovered.

Case 6, In this case also the placenta was born one hour and a half before the child. The fœtus had been long dead; there was, therefore, no circulation through the placenta, and, consequently, no hemorrhage. Mother recovered.

Medical Times, Jan. 8, 1848, *p.* 233.

Case 23.—Was sent for in this case by Messrs. Powell and Goddard, who informed me the placenta had originally presented, and had been entirely removed; no hemorrhage followed its extraction. The arm presented, and the child was so firmly impacted in the pelvis, that I found it impossible to turn; embryotomy was therefore performed, and the child with difficulty removed. There was no satisfactory rally, and the poor creature died at the end of the week with a fever of the low type. I know not whether the presentation was partial or complete.

Case, 24.—Mr. Doughty requested my assistance in this case in the early stage of the labour, before serious exhaustion came on;

[*Dr. Waller relates numerous cases, a few of which we subjoin.]

and the result was most satisfactory. His patient had been bleeding for some hours, and, although her countenance was pale and rather faltering, there were no symptoms of pressing danger. When I first saw her she was sitting by the fire: there were no pains, and she felt altogether so comfortable that we had some difficulty in persuading her to retire to her bed for the purpose of undergoing the necessary examination. This was at length effected, and the placenta felt encircling the os uteri; a small portion had been detached anteriorly, and through the aperture thus formed, the funis, which was still pulsating, had descended. The os uteri was considerably dilated; the undilated portion rather firm; bleeding going on, but it was not excessive. Prior to turning, I detached the placenta entirely from its connexion with the uterus, for the purpose of ascertaining whether the hemorrhage would be thereby increased. I thought this a favourable opportunity of testing Dr. Simpson's plan, knowing that, if alarming symptoms came on, I had the labour under my own control. No hemorrhage followed this separation; the hand was carried onward, and the child extracted: although in a state of asphyxia, the ordinary means succeeded in restoring it. The mother had no bad symptoms, recovering as quickly as she had been accustomed after an ordinary confinement.

Case 27. A case of partial presentation. The arm presenting; the uterus rigid; the os very partially open. There was considerable hemorrhage. As there was no possibility of turning when I first saw this patient, the placenta was detached, and dilatation waited for. No hemorrhage occurred, and in less than twelve hours afterwards turning was had recourse to, and a dead child extracted. The female recovered from the shock of labour, but died of muco-enteritis during the week, this probably induced by the loss of blood.

Case 28. A case of complete placental presentation, with Mr. Hall. This was a very interesting case. I saw the patient in the evening of the day, and learned from her attendant that he had been suddenly called to her, in consequence of profuse hemorrhage; she was then just entering upon the ninth month of gestation, and had previously borne children. The bleeding was considerably arrested, and she was recovering from a state of syncope. The vagina was full of clots; the os uteri rigid, and just beginning to dilate; the placenta attached over its entire circumference. Turning was here impracticable; I therefore introduced my forefinger into the uterus, and separated the placenta throughout its whole extent, without rupturing the membranes. After waiting half an hour to ascertain whether there would be any renewal of the flooding, and finding it had ceased, the female was left to her repose. At four o'clock on the following morning labour-pains commenced, when there was a very slight discharge of blood. On my visit at eleven the os was fully dilated; the waters had just escaped. On examination the placenta was felt hanging down into the vagina, perfectly separated from the uterus; the feet presented. With a little assistance the child, which was dead, was speedily born, the afterbirth immediately following.

Medical Times, Jan. 15, 1848, *p.* 257.

[The general result is, that in 33 cases of placental presentation seen by Dr. Waller, twenty-three only of the mothers permanently recovered. The fatal result arose, however, in some cases from previous and culpable neglect; in others, the patient sunk in a few days from diseases aggravated by loss of blood. Dr. Waller remarks:—]

Making allowance, however, for the facts above mentioned, it must still be confessed that the maternal mortality bears a fearful ratio to the number of recoveries when treated by the common method; and, consequently, any proposal to remedy an apparent defect in the mode of proceeding in these alarming cases, especially when its object is to preserve the life of the mother, ought to be received with respect, and, if practicable, to be fairly subjected to the test of experiment, before an adverse opinion be pronounced. This leads me to the consideration of my first question:—

Will the bleeding be arrested by the complete removal of the placenta from its connection with the uterus?

The interesting records furnished by Professor Simpson prove that in many cases this desirable object has been accomplished by the means proposed; nevertheless, in questions so purely practical as the present, so easily answered by personal experience as opportunities may offer, I hesitate to recommend to my pupils any novel plan of proceeding, until I can strengthen my recommendation by an appeal to facts witnessed by myself. What, then, has occurred in my own practice tending to elucidate this subject? It will be noticed that in several cases the placenta was detached before the birth of the child, and in every such instance the bleeding ceased, not for a time only, but entirely. As the fœtus had long been dead in one case and the placenta when examined showed no marks of recent maternal circulation, it is presumed that the vessels had been long closed, and, therefore, no inference can legitimately be drawn from it as bearing upon the point in question; but in another case the plan proposed by Dr. Simpson was exposed to as severe a test as its most determined opposers could desire; for in this instance the placenta was entirely detached from the uterus, without rupture of the membranes, for at the least fourteen hours before the birth of the child, the effect of this mode of proceeding being the entire suppression of the bleeding: this has been the uniform result in all the cases I have had an opportunity of observing; there has not been a mere temporary arrest, but a permanent stoppage of the flooding. Although it would be premature to draw a definitive conclusion from the limited number of cases which have as yet been recorded, yet I cannot help considering it highly probable that the first question will hereafter be affirmed, and it will be found that where flooding occurs in placental presentation, from a partial detachment of the organ, its complete separation will be followed by an entire cessation of the flow.

This fact, then, being allowed, is Dr. Simpson's explanation satisfactory, viz., that the blood proceeds entirely from the exposed orifice of the placental sinuses? After much reflection I cannot arrive at this conclusion; I do not think the hemorrhage occurs entirely or even principally from these vessels, although there is no reason to doubt that blood will escape from them until they are closed by the formation of coagula around their gaping orifices, when such effusions will necessarily be prevented. It appears to me that the source of supply, "the long and slender utero-placental arteries," are insufficient to furnish the quantity of blood which so frequently bursts forth from the interior of the uterus, especially when it is remembered that such supply is partially cut off, in consequence of the placenta being already detached from its uterine connection, to a greater or less extent. Again, I cannot forget that many of the severe cases of uterine hemorrhage which have occurred in my own practice have been those in which the hemorrhage has continued, and sometimes ended fatally, after the placenta has been expelled from the uterus, where there could consequently be no placental circulation at all; and in these cases, therefore, all the blood must flow from the uterine surface; and in the *post-mortem* examinations the patent orifices of the large veins of the uterus were obvious enough. My conviction is, that the sources from whence the blood issues in cases of placental presentation are two-fold—partially from the placental caverns, but chiefly from the uterine sinuses; I apprehend that the torn arteries furnish a comparatively small quantity, certainly not sufficient to produce any alarming symptoms.

To what cause, then, is the cessation of hemorrhage to be attributed? I feel no difficulty in answering this question, for, as there is but one condition necessary for the production of the bleeding, so there is but one condition necessary for its arrest: the former consisting in a separation of the natural connection existing between the uterus and placenta; the latter in contraction of the muscular fibres surrounding the bleeding vessels. The complete separation of the placenta in the cases above related, and in those published by Dr. Simpson, must have been followed by this contraction (for under no other circumstances could the flooding by any possibility have been arrested); and although it could not have been perfect, as the uterus still contained the fœtus in its interior, yet it was sufficient to put an end to the flow of blood. Further observations are required in order that it may be ascertained whether the same result will be attained in every instance; I entertain, however, a confident anticipation that such will be the result, and that it may be as certainly expected as that hemorrhage will cease after the evacuation of the liquor amnii, where it is of the accidental kind.

Let it not, however, be supposed that I am inclined to discard the old operation, and to adhere to the new, in every instance of placental presentation. I would rather regard the new plan as a valuable addition to our knowledge in the treatment of these formidable complications of labour, but by no means likely to supersede delivery by turning; and I entirely agree in opinion with most of my professional brethren, that the cause of the great mortality is justly attributable to injudicious delay, and that far more favourable results would be obtained by a more prompt and energetic method of proceeding; in other words, to use the language of an obstetric author, "To determine to deliver early is to determine that the patient shall not die."—("London Practice of Midwifery.")

At the same time it must be acknowledged, that circumstances may occur rendering version for a time impracticable, as in cases 7 and 17, where considerable delay was inevitable on account of the unyielding condition of the soft parts: for although, as a general rule, dilatation, or at any rate, dilatability usually speedily takes place where there is much hemorrhage, yet we meet in practice with many exceptions. Had I been aware that the placenta might be removed without compromising the safety of my patients, I should have been relieved of some hours of great anxiety, and much maternal hemorrhage would have been prevented. The plan was adopted in cases 23, 27, and 28, with the happiest effect, so far as regards the flooding. In Mr. Austin's case, (31,) much blood was lost during the process of dilatation; perhaps this also might have been arrested.

There is also another class of cases, in the management of which the greatest benefit may be calculated upon; and I would particularly direct the attention of the profession to it, because, in the majority of instances, these are the very cases to which the physician-accoucheur is most frequently called—where the flooding has been going on for a considerable time; and he finds, on his arrival, that his patient is in an alarming state of exhaustion, the bleeding still continuing. Every practitioner of experience knows that the sudden emptying of the womb, under these circumstances, is attended with considerable risk: nevertheless he could not be blamed for making the attempt. He would naturally reason thus:—"My patient is in a very unfavourable state for artificial delivery, but, as hemorrhage is still going on, the longer I delay the weaker she will become, and my chance of success be proportionally diminished." He, consequently, turns the child, and in many instances the result is unfavourable. If, however, the safety of the proposed plan be established—if it should by repeated trials be proved that an entire separation of the placenta would at once put a stop to the hemorrhage—he would of course adopt this plan; and, by so doing, the immediate danger would be averted, the patient's strength might be recruited by the use of suitable nourishment, and in the further treatment of the case he would be guided by circumstances as they might arise.

I will merely add, in conclusion, that I wish not to be misunderstood. My experience does not warrant me in giving a decided opinion that the proposed plan will succeed in all cases; but I have seen enough to induce me to give it a trial, assuming that in the present state of our knowledge it has been attended with no increase of the dangerous symptoms, but, on the contrary has been followed by their entire removal; and believing that, in certain cases, the adoption of the new method will be found to be practicable, at a time when recourse could not safely be had to the usual operation of turning.

Medical Times, Jan. 29, 1848, *p.* 291.

[Mr. Ray, of Dulwich, publishes the following cases, in which the placenta was either expelled or removed from the uterus, when the patients were exhausted by the loss of blood and were still bleeding, with the effect of causing an immediate cessation of the hæmorrhage and a favourable termination of the case. The first patient was suddenly attacked with hæmorrhage in the seventh month, and when visited was in an extreme state of exhaustion.]

On examination the os uteri was found dilated, and the placenta bulging through it: anteriorly the distended membranes could be reached, and a foot detected; the membranes were then ruptured, and the foot brought down. Hæmorrhage continued; slight uterine pains occurred; pressure was applied over the uterus, *which was firm*, and the child, a female, delivered still-born. On examination another fœtus was detected; the hæmorrhage continued, and the placenta occupied the same position: with some difficulty I reached and ruptured the second bag of membranes; and with the gush of liquor amnii the placental mass was expelled, which proved to be a double one, and remained connected by one cord to the child unborn. The hæmorrhage now (half-past five,) ceased, and although uterine pains did not recur for two hours at least, and the delivery of the second (a still-born female,) was not completed until after half-past eight, *there was no return of it.*

[The other patient was in the last month of pregnancy, and had also lost an immense quantity of blood.]

On examination blood was found oozing from the vagina, which was filled with coagulum. *The os uteri was fairly open and dilatable:* within it, and completely surrounding it, was found the placenta. No sensation of fluid within the uterus could be detected, and the firm head of a fœtus could be distinctly felt through the placenta. The *uterus* through the abdominal parietes was *found firm and globular, and remained steadily so, without any evidence of uterine pains:* no fœtal movement could be detected, and, having no stethoscope with me, the position and state of my patient prevented my endeavouring to ascertain the existence or non-existence of the child. Without altering the position of my patient. I determined upon immediately removing the placenta, which I found attached to the anterior part of the neck of the uterus, the posterior and larger portion of the placenta being already detached, and separated from the uterus by coagulum. The separation was readily effected by passing the left hand between the uterus and placenta posteriorly, then gradually rotating the hand to the right, keeping the dorsal surface of the fingers firmly pressing against the uterus, and the margin of the placenta within their palmar surface, so that it was readily removed after its detachment by bending the fingers and withdrawing the hand. Some portion of the membranes being fixed between the head and pubes yielded during extraction, and remained behind. Hæmorrhage continued during the removal of the placenta, but ceased with its removal at 5 a. m., and no coagula formed afterwards in the vagina. The placenta was entire, of usual size; coagula were adhering to a considerable portion of its maternal surface, and its structure was to all appearance healthy. The cord was not tied nor divided until some half hour after the removal. I could distinguish no pulsation in it, but found the umbilical vein enormously distended.

The poor woman was now warmer; somewhat conscious; pulse more perceptible, though very feeble,—rapid, and not to be accurately counted; free from pain and hæmorrhage. The *uterus continued firm and globular;* and, upon examination, a very firm fœtal head was found resting upon the open os uteri in the natural position. The abdomen (which had until now been supported by hands,) was encircled by a broad bandage; and as the patient dosed at intervals, the brandy and gruel was only occasionally given, and in smaller quantities.

About half-past 7, slight uterine pains commenced, and gradually increased; the temperature of the patient was good; the strength of the circulation had improved, and the radial artery communicated the characteristic vibratory sensation of the hæmorrhagic pulse, the number of beats varying from 140 to 150 in the minute; no return of hæmorrhage.

At half-past 8 pains were frequent, but not strong enough to be effective; the firm fœtal head remaining fixed in the brim of the pelvis, and resting on the dilated and dilatable os uteri. One drachm of powdered ergot was given in the form of infusion, and speedily increased the strength and frequency of the pains, but without affecting the position of the fœtal head. Shortly after 9 o'clock, not deeming it prudent to tax further my patient's powers of endurance, I opened the head with a strong pair of scissors, and, with very little aid in the way of traction, the head shortly passed into the cavity of the pelvis, and was expelled with a portion of the membranes *by the uterine efforts* about 20 minutes past 10—more than five hours after the removal of the placenta. There was no hœmorrhage after the labour: indeed after the removal of the placenta, the fingers were not rendered more sanguineous than usual by the examination (excepting, of course, the effect of opening the cranium,) and the only napkin I kept applied was soiled, not soddened, by the discharge. The child (a male,) was dead, well-formed, of full size, and livid.

Provincial Medical and Surgical Journal, March 8, 1848, *p* 124.

[Mr. Meadows gives another case. The patient was thirty-three years old, in her third labour; had had hæmorrhages for the last two months, and was very much exhausted. Mr. Meadows says:]

I found the os uteri almost entirely dilated, relaxed, and yielding. with the placenta entirely adhering to its circumference. With little or no difficulty I succeeded in introducing the hand into the uterus, and in the course of about ten minutes or a quarter of an hour, I withdrew the placenta. The hæmorrhage immediately ceased. I then gave the patient a strong dose of ergot, and in half an hour the uterus began to act powerfully. After an hour's almost continued pain, the child was expelled, still-born, under head presentation. The patient, who is a weak and delicate person, continued almost in a state of syncope for several hours afterwards. She gradually recovered her strength, and is now quite convalescent, and able to attend to her domestic affairs.

Lancet, Jan. 1, 1848, *p.* 27.

[Mr. Griffin, of Weymouth, gives a case as follows:—

The patient after having had slight pains for about three hours, suddenly lost about a pint and a half of blood. Some hæmorrhage continued, and in about an hour afterwards when seen by Mr. Griffin, the patient was in a state of great prostration, and the placenta was found to present. Mr. G. says:]

The question immediately arose as to the best course to be pursued. Were we to separate the placenta, as advocated by Dr. Simpson, plug the vagina, or resort to the old plan of separating still further the placenta and turn? As all pain had ceased, I thought the application of the plug would be the best, which was effected by immersing a silk handkerchief in cold water and firmly pushing it up the vagina; a second was required, the half of which was introduced before the passage was filled. All external hæmorrhage then ceased, absolute quiet was enjoined, cold fluids only allowed, and Tinct. opii. ♏ xl. given. The pains did not return for thirty-five hours, when her medical attendant was again summoned, who stated to me that in consequence of their frequency and strength he had removed the plug; no hæmorrhage ensued, nor did any recur. The head then descended, and on my seeing her about an hour after, it had just emerged from the vagina, followed in fifteen minutes by the body. The child had been dead some time, and was in a putrid state, in consequence of which the cuticle was detached from the scalp, and the brain in a fluid state, and altogether was so smooth and bag-like to the touch, that when first felt, I was informed, it conveyed the impression of the membranes being unruptured. The funis was shrunken and putrid; no blood escaped on its division.

The uterine contractions were feeble, and as there was no disposition to throw off the placenta, ergot of rye was given, and repeated in a quarter of an hour, the uterus several times becoming flaccid and apparently dilating, to prevent which I grasped it externally with my hands. Fortunately there was *no hæmorrhage.* It was then determined to introduce the hand and extract the placenta, as traction by the funis was impossible from its putrid state; the *placenta was found to be half detached*, and the remaining part was readily separated. The pulse at the birth of the child, was 160; but on the removal of the placenta, increased to 196, which with the general death-like appearance of the patient, made us very anxious. Gin, the only stimulant to be had, was freely administered, and in an hour the pulse subsided to 140. On examining the placenta, one edge of it, an inch and a half square, *was covered with coagulated blood, firmly adhering*, which I have no doubt was the part that had been detached from the os uteri. This woman died in fifteen days, apparently from irritative fever, of a typhoid character, produced probably from the absorption of putrid matter.

British Record, March 1, 1848, *p.* 108.

[Mr. Griffin proceeds:]

I see no difficulty in entering into Professor Simpson's views, that it is from the placenta the hæmorrhage takes place, the uterine extremities of the arteries *contracting*, do not bleed to any extent—that is, when the uterus is not in a passive state—but the placental extremities of the veins remain with open mouths, there being no contractile power in them; and if Dr. Reid's view of their anatomy be correct, we need not be surprised at the loss of blood: he says, "when the blood of the mother flows into the placenta through the curling arteries of the uterus. it passes into a *large sac* formed by the inner coat of the vascular system of the mother, which is intersected in many thousand different directions by the placental tufts projecting into it like fringes, and pushing its thin wall before them in the form of sheaths, which closely envelope both the trunk and each individual branch composing these tufts. From this sac the maternal blood is returned by the utero-placental veins, without having been extravasated, or without having left her own system of vessels.

Into this sac in the placenta, containing the blood of the mother, the tufts of the placenta hang like the branchial vessels of certain aquatic animals, to which they have a marked analogy. This sac is protected and strengthened on the fœtal surface of the placenta by the chorion; on the uterine surface by the decidua vera; and on the edges or margins by the decidua reflexa." Weber states that "the inner coat of the venous system of the mother is prolonged into the placenta;" he describes it as "ramifying in the intervals of the placental tufts, in the form of large venous sinuses, upon the walls of which, the placental tufts are not only ramified, but also project into their interior, carrying the walls of the sinuses before them." Wagner describes the utero-placental blood vessels as "winding in an expanded net work round the tufts of the chorion containing the vessels of the embryo, and this net work is formed of peculiar, but very delicate tubes of large calibre, especially in the case of the veins." From these "sacs, sinuses, or tubes of large calibre" there is at each uterine contraction, in partial separation of the placenta, a gush of blood, and it is to be considered that this substance is almost as compressible as a sponge. That these sinuses communicate is proved by Mr. Bloxam, who says, "I have repeatedly injected the interstices of an entire placenta, from one or other of these orifices, and that it is closely compressed we know from the circumstance of the fœtal circulation being suspended; thus ergot acts so powerfully as to keep up an almost continued uterine contraction, which, if prolonged to any great extent, almost invariably causes the death of the infant." This gush of blood could not take place from the uterus, as there is no reservoir for it, excepting the sinuses; and that these are closed when the uterus contracts, is proved by Mr. Bloxam, who at the time he wrote, believed the hæmorrhage to be uterine; he says, "I cannot conclude this paper without a brief observation on the mechanical arrangement of the uterine orifices for the prevention of hæmorrhage. In regarding the immense size of the apertures of the venous sinuses, one feels a degree of astonishment that hæmorrhage is not more frequent and more fatal; but when it is remembered that the essential property of the uterine fibre at the time of gestation is that of contractability, and that by the exercise of this property the orifices of the deeper sinuses must be closed by the more internal layer of muscular fibres, inasmuch as these apertures are not placed on the same meridian, our surprise ceases. It is probable that, independently of this mechanical arrangement, the flow of blood from the more superficial openings may be arrested by the formation of coagula, a process for which the flocculent structure of the decidua seems highly favourable." Supposing that I am right in adopting this theory, then the almost entire cessation of hæmorrhage on the separation of the placenta is entirely accounted for, as the supply of blood is cut off. I say almost entire, because I believe that it does not invariably cease; which I imagine arises from the uterus itself not contracting sufficiently to close the curling arteries, and, in fact, being in that state which we perceive when flooding takes place after delivery; I am of opinion that the hæmorrhage then comes from the uterine extremities of the curling arteries, and not from the sinuses, as the blood continues to flow in an even manner, and not in gushes. On looking at the subject in a practical point of view, I think it must be evident that we may safely detach the placenta, when the uterus continues to act; but when that organ is passive, great danger must attend separation, as the uterus will be in the same state as if it did not contract after delivery, and much blood be lost from the curling arteries, and the woman's life endangered.

British Record, April 1, 1848, *p* 133.

[Referring to cases in which copious and repeated hæmorrhages occur during the eighth or ninth month of pregnancy, and yet signs of labour do not appear, Dr. Reid says:]

A practice I have of late followed in such cases is to evacuate the liquor amnii, pass a conically-shaped plug into the os uteri, filling up the vagina behind it, and then to exhibit one or more doses of secale cornutum internally. The good effect of this practice, in the few cases in which I have tried it, will induce me to employ it also for the future. It does not altogether stop the hæmorrhage, of course, but it keeps it for a time within the uterus, where it forms a large coagulum, the presence of which, combined with the irritation caused by the plug, excites uterine contraction, (at this time so anxiously desired.) The os uteri becomes soon much more dilated by the expulsion of the clot, and we are then enabled to introduce the hand and turn the fœtus with more facility; or in some instances the latter, together with the placenta, are speedily expelled. An illustration of this fact will be found in the following case:—On Jan. 28th, I was requested to see a case, with Messrs. Beaman and Wakefield. The lady was advanced to the eighth month of pregnancy, this being her ninth child borne within ten years. She had been seized, during the evening, suddenly with flooding, and, from the effect produced on the system, she must have lost much blood, but there was no uterine contraction. The os uteri just admitted the end of the finger, and the head of the fœtus could be felt high up, with a loose flap of the placenta at the posterior part. As the flooding continued, it was determined, at seven P.M., to evacuate the liquor amnii, which was effected by the long trocar generally employed for that purpose, and the plug was inserted in the way described. One drachm of ergot was to be administered likewise. Mr. Beaman, whose patient the lady was, remained in charge of the case, and at half-past nine requested that I should again see it with him, as the hæmorrhage had slightly returned. Mr. Beaman, on making an examination, had found the plug thrust down, with large clots in the vagina, and a considerable re-collection of liquor amnii in a bag of membranes, which were again ruptured. The ergot had been given, and on examining per vaginam, the os uteri was somewhat dilated, with the vertex close to it. In making this last examination I attempted to dilate the aperture, and a labour-pain immediately came on. Four or five more followed in rapid succession, when a fœtus, about seven and a half months advanced, which had evidently been dead for a day or two, was expelled, and the placenta was extracted by Mr. Beaman immediately after. No hæmorrhage recurred, and the lady, although much exhausted by the previous loss of blood, recovered very favourably. The whole labour I should think did not occupy more than half an hour. The same means I have applied with equal advantage in cases of severe floodings occurring during threatening abortion, or to bring on premature labour in more advanced cases, when the patient was placed in danger by the continuance of an alarming hæmorrhage.

Lancet, March 18, 1848, *p.* 313.

[With reference to the practice of detaching the placenta and leaving the case to nature, Mr. Newnham, of Farnham, says that the objections to it are,]

That in the most formidable cases of uterine hæmorrhage, it is inapplicable, viz.—in those occurring about the sixth or seventh month, when the neck of the uterus is undeveloped, and when the placenta cannot be detached, without a degree of violence and internal injury altogether unwarrantable.

That in the ordinary cases, it requires as much time, and as much violence to the uterus to detach the placenta thoroughly, as it does for a well informed accoucheur to pass his hand—rupture the membranes—turn the child and bring down the feet, when the hæmorrhage usually greatly abates.

That if the placenta be detached, and the case be now left to nature, it may be *even some days* before uterine pain is established; and although there may be no hæmorrhage, yet the patient suffers great risk from the irritation and decomposition of the placental mass,—while the practitioner, his patient, and her friends, are all kept in a state of intense anxiety.

That the life of the fœtus is inevitably lost, except in some exceptional cases, and these so few as not to be worthy of being taken into the calculation.

That the loss of maternal life is not diminished,—for although the depressing consequences of hæmorrhage may be lessened, yet the irritation of the nervous system is so proportionally increased, that the actual loss of life is not diminished.

That the indulgence thus afforded to vicious indolence and inattention, is an element of the most serious importance in our estimate of the new practice. Every one can very easily detach a placenta, and relieve himself from the responsibility of the case, by casting all the rest upon the resources of nature; and leaving the fatal event to be scored up to her deficient resources. But every one is not possessed of those physical and mental qualifications, which would give him the self-possession of conscious power adequate to the occasion, or the firmness which would ensure steadiness of purpose and of action under the most trying circumstances. For all those, therefore, who do not feel themselves equal to the management of placenta prævia, it would be a matter of no small moment, if they could exonerate themselves from the burden of action, and stand by in the (guilty) attitude of expectation.

Another objection to the proposed plan, will be found in the existence of cross-presentations, which it is obvious *must* be left to themselves—*must* become exceedingly difficult of management if the waters have escaped—and if not, would be rendered less easy and successful from the degree of decomposition which would have taken place.

There may be cases of distorted pelvis, in which this mode of treatment may be valuable: but how very few are such cases: and in the only other case to which it can be supposed to be applicable, it has been shown that the irritation of the undeveloped neck of the uterus, might be fearful in its consequences.

In the management of placenta prævia, apart from the ordinary treatment of hæmorrhage which will yet come to be considered, the first thing to be ascertained when called to such a possible case, is the cause of the hæmorrhage; and this cannot usually be obtained without introducing the *whole hand* into the vagina, for the purpose of enquiring, first—whether the cause of the hæmorrhage be placenta prævia or not; and if so, whether it be centrically attached over the os uteri, or only partially so; and, secondly—the period of pregnancy; the degree of development of the neck of the womb; and whether the os uteri be thick and rigid, or thin, soft, and easily dilatable. In conducting this examination, the patient must be previously informed of its necessity; and care must be taken not rudely to displace the coagula which may have formed upon, and stopped the mouths of, the bleeding vessels; nor to tear up fresh vessels and to renew the bleeding,—the great object being to obtain knowledge, but to keep the womb quiet and free from irritation.

Having ascertained that the placenta is not attached to the os uteri, or (in other words, that the hæmorrhage is accidental), if the neck be undeveloped, it is better to wait till the membranes may be easily ruptured—and then break them, and leave the remaining issue to nature.

In those cases in which the placenta is found to be centrically attached over the os uteri, but the neck is undeveloped and rigid, in our treatment, we must fall back upon general principles; we dare not interfere as yet, and must be contented with putting into practice the general plans of conduct to be presently noticed. Before the seventh month, should hæmorrhage occur, occasioned by placenta prævia, the neck of the womb will not be sufficiently developed, to admit either the separation of the placenta, or the introduction of the hand: both plans would be so extremely dangerous, that the hæmorrhage must be treated upon general principles, and careful waiting must be enjoined, except that if life be threatened, there could be no valid objection against introducing a small trocar and canula through the placenta, so as to evacuate the liquor amnii, and bring on parturient pains. This might be done without risk of increasing hæmorrhage, and without the remotest injury to the mother; the child is not yet to be considered as "*viable.*" Still this is supposing a case which is very rarely to be met with, because hæmorrhage from placenta prævia does not usually occur, till the neck of the uterus is considerably developed,—sometimes even not until the os uteri is beginning to dilate. There is, therefore, no certainty that the case is not one of placenta prævia, because hæmorrhage has only shown itself when pain has commenced. This hæmorrhage may, or may not be important—and there is no certainty on the subject, no safety to the mother, no security to the practitioner, but in introducing the hand into the vagina, and becoming certain upon the subject.

Above all things, let the practitioner beware of leaving such a case to nature's agencies; or of waiting in the hope that some unseen, unknown good would arise from her conservative efforts.

Nothing but danger results from delay; nothing but inevitable destruction from trusting the case to the chapter of accidents; whatever is done should be done promptly, steadily, energetically, but not rudely. Whenever there exists a suspicious hæmorrhage, its cause must be defined, and being ascertained to be placenta prævia, the membranes should be ruptured, the hand introduced, and the child turned and delivered; *provided always*, that the os uteri be sufficiently dilated, or *easily dilatable*. If neither of these states be present, we must wait, enjoin perfect rest, act upon general principles;—in a robust person, exhibit nauseating doses of antimony, or ipecacuanha, and wait till sufficient relaxation has taken place.

British Record, April 1, 1848, *p.* 121.

[It is well known that Dr. Lee disagrees with Dr. Simpson and others on the nature and treatment of placental hemorrhage. In the following abstract he brings forward the opinion of Guillemeau in support of his own views.]

"Before attempting anything," Guillemeau says, "two circumstances are to be attended to; the first is, to consider whether the placenta is little or far advanced; for if the former, having placed the mother in the proper position, it must be replaced and pushed back with the greatest diligence; and if the head presents, it must be brought down, that it may be expelled in natural labour. But if some difficulty should occur, so that the head could not advance, or that the mother or infant, or both, were feeble, and there was a probability of the labour being contracted, without doubt the best expedient is," he says, "to bring down the feet of the child, and deliver as gently as possible." It is highly probable that the practice here recommended had been adopted in cases of partial placental presentation, to which alone it could be applicable—but the fact cannot positively be determined.

"The other point to be observed is," says Guillemeau, "that if the after-birth is much advanced, and cannot be replaced in consequence of its size and the hemorrhage, and that the child is closely following it, and requires only to pass into the world, the placenta must be completely drawn forth." The practice here recommended could not have been employed usually by Guillemeau in cases of placental presentation, but only in those where the placenta had been spontaneously detached from the cervix of the uterus, and was partially expelled. The general rule laid down by him so clearly in the first sentence is, that when the placenta comes first, the most certain and expedient plan of treatment is, to deliver immediately by the operation of turning, a knowledge of which, he says, he obtained from Messrs. Paré and Hubert. It is here likewise stated that when the placenta comes first, and is separated from its attachment by uterine contractions, the blood flows from the openings in the veins, which are situated in the walls of the uterus, to which those of the placenta had been joined or united.

The circulation of the maternal blood through the placenta is here assumed to be established as an anatomical fact, although it was not then demonstrated, as far as we know.

That this account of the source of the blood in cases of placental presentation given by Guillemeau is correct, has now been clearly proved. The structure of the placenta, and the manner in which the maternal blood passes through the decidual arteries into the cavernous structure, demonstrate that the torrents of blood which sometimes suddenly issue from the gravid uterus in the latter months, cannot possibly proceed from the veins of the placenta, the semilunar orifices of which are immediately closed when a solution of continuity takes place between the organs. The blood has never been seen to proceed from the placenta in unavoidable hemorrhage, nor has it, I believe, ever been witnessed in cases of inverted uterus, where the placenta has remained partially adherent.

In complete inversion of the uterus, the blood usually flows profusely from the lining membrane, and these vessels furnish likewise the blood in accidental uterine hemorrhage,—in flooding after the expulsion or removal of the placenta where the uterus does not contract,—in cases of hemorrhage where the uterus is distended with serous cysts, there being no placenta within the cavity from which the blood can flow,—in the early months of pregnancy, before the placenta is developed,—and in the unimpregnated uterus.

Dr. Chowne, in his elaborate and logical paper, has established, by evidence which it is impossible to overthrow, that the blood in all the varieties of uterine hemorrhage proceeds from the source above pointed out by Guillemeau.

In the chapter above quoted, there is not a single observation to justify the assertion of Dr. Rigby, that Guillemeau evidently supposed that this presentation of the placenta at the os uteri was owing to its having been separated from its usual situation in the uterus, and fallen down to the lower part.

There is an expression employed by Guillemeau, which incontestably proves that he was fully aware that the placenta had not fallen down, but must have adhered by bloodvessels to the uterus:— "D'autant qu'ils s'ensuit ordinairement continuel flux de sang pour ce que les embouscheures des veines, qui sont situées aux parois de la matrice (esquelles celles de l'arrière-faix estoient joinctes) sont ouvertes." Guillemeau does not say that he actually felt the placenta adhering either partially or completely to the neck of the uterus, as Portal does, but he distinctly affirms that when the placenta comes first, the veins of the placenta are joined to those of the uterus, and that on a separation taking place, the blood escapes from the veins laid open in the lining membrane. It is impossible, therefore, to deny that Guillemeau was aware that the placenta originally adhered to the neck of the uterus, that its separation was the cause of the hemorrhage, and that the most certain and expeditious method of relieving women under such circumstances, was to pass up the hand into the uterus, turn the child, and deliver. All these important facts were ascertained towards the close of the sixteenth, or at the very commencement of the seventeenth century.

[Mauriceau also, Dr. Lee observes, recommends immediate delivery.]

Lancet, Nov. 20, 1847, *p.* 546.

134.—TWO CASES OF INTERNAL HEMORRHAGE.

By Dr. A. Tyler, Dublin.

[To the first case Dr. Tyler was called after a midwife had been in attendance for twenty-two hours. He found the os dilated, and the head presenting; and after two quarts of urine had been drawn from the distended bladder, the pains improved. As they again became weak, ergot was given, and a living child was born. Dr. Tyler proceeds to say,—]

The uterus contracting well, I allowed the midwife to apply the binder. A quarter of an hour after the birth of the child, I proceeded to examine if the placenta had descended; but not finding it in the vagina, I made up my mind to wait a little longer for its natural expulsion. However, fortunately before leaving the bedside, I placed my hand upon the uterus, which felt soft and enlarged, pressure being exerted, several clots of blood escaped externally; my patient now said she felt her head light. The binder was immediately removed, and cold water applied over the uterus by means of the hand, and also a wet towel, under which treatment the uterus contracting, expelled more clots. Thinking it high time to ascertain the condition of matters inside, I passed my hand up into the cavity of the uterus, the lower part of which was filled with coagula; following the cord as my guide, I pushed my hand through the coagula, until it was grasped by a constriction of the upper part of the uterus, through which a portion of the placenta could be felt protruding, the mass of it being above; by working the fingers up and down, I was enabled, without forcing the constricted part, to bring down the entire placenta, but torn considerably. A tendency to hemorrhage still continued, which was only overcome by repeated cold applications, and friction over the uterus for the space of half an hour, the uterus all that time alternately relaxing, and again contracting under the influence of fresh cold applications. The window was thrown up, and the door of the room opened to admit a stream of fresh air; under this treatment and the administration of spirits diluted with cold water, the woman gradually rallied, and the hemorrhage ceased. The binder was again firmly applied: but I took the precaution of placing two pads under it, immediately above the fundus uteri, so as to prevent the possibility of that viscus again enlarging. My patient soon fell into a tranquil sleep.

[This patient recovered: the next case, which we quote entire, was a fatal one.]

Mrs. M., first pregnancy, aged thirty-five, was delivered of a living child, on the morning of the 21st of December, 1842. The labour was tedious. Dr. D., the gentleman who attended her, being fatigued after sitting up with his patient all the previous night, ventured to leave her for half an hour, without previously removing the placenta. On returning to her at eight a.m., the placenta was still retained, and the patient's state so alarming, that he at once requested the assistance of a neighbouring practitioner, Dr. H.; who on his arrival at the house, found the poor woman almost pulseless. He administered spirits freely; but was afraid in the then exhausted state of the patient, to attempt the extraction of the placenta; he, therefore, sent a message for me to come and take charge of the case, and with directions to administer the ergot of rye. When I saw her first, at ten a.m., three hours subsequent to the birth of the child, she was struggling against the attendants, attempting to get out of bed, and calling for a drink of cold water. I had no opportunity of administering the secale, or indeed attempting any treatment for her relief, as after a few struggles she gradually sunk exhausted, and expired.

In order to ascertain positively the nature of the case, I introduced my hand into the cavity of the uterus, where I found the placenta loose and surrounded by an immense quantity of coagula; no blood had escaped externally, nor could I feel any pulse at the wrist when I first saw her. Comment upon this mismanaged and neglected case is unnecessary; however, it is my painful duty, to state my firm belief, in which all experienced practitioners must agree, that had the same watchfulness been adopted by the attendant, and a like active treatment pursued in the management of this case from the first, an equally favourable result might have been expected, as in that of Mrs. D.'s just detailed.

British Record, Feb 1st, 1848, *p.* 50.

135.—*Case of Vagina Imperforate at the Time of Labour.*—By Dr. J. Ogden, Manchester.—[The patient, who had been married for ten years, was in labour with her first child. Her mother stated that when she was nineteen years old, she was treated for retention of the menses, and an incision made in the closed vagina: the opening, however, closed, and she afterwards menstruated regularly by the meatus urinarius. When Dr. Ogden was called to the case, he could find neither labia, nymphæ, clitoris, nor vagina, nothing indeed but a flat, hard tumour, like the fœtal head. He says,—]

I immediately dispatched a messenger for my scalpels, and on receiving them, made an opening of considerable extent; as large as the rectum and meatus urinarius would admit of, without injury to the parts. I was greatly surprised to find the barrier, or intervening substance which I had to penetrate, fully an inch and a half in thickness. The membranes were unavoidably severed in the operation, and a considerable quantity of water was evacuated. In about an hour after the section had been completed, she gave birth to a still-born, moderately sized male-child, during the expulsion of which, great care was required to prevent laceration, which caused much anxiety to avert. About two years after the accouchment, I was again called in, to attend her, at the full time of utero-gestation. I found the vagina thick and unyielding, and which would, with the greatest difficulty, allow of the admission of two fingers only; the os uteri fully dilated; pains severe, and recurring at short intervals. I waited six hours, in hopes of the vaginal contraction yielding a little; but eventually ascertaining the impossibility of it, I determined, as before, to assist the expulsion by opening the vagina with the scalpel. This I accomplished with the greatest care; first introducing a catheter into the bladder, as a guide to prevent injury to that organ, and then making use of my finger, per anum, in performing the section towards the rectum. In about an hour, at imminent risk of laceration, with the aid of the vectis, I succeeded in extracting a full grown, living, female child.

After the birth of this her second child, I saw Mr. Grime, who had removed to Manchester, and elicited from him the following facts, regarding the operation, which he and Mr. M'c Maith had previously performed upon her. After expressing his surprise and astonishment at her being impregnated, he stated, that he, in consultation, attempted to open the vagina with a lancet, for retained menses; but finding the intervening substance so thick, was compelled to resort to the scalpel. After cutting to the depth of an inch and a half, they were much surprised by a gush of water issuing from the wound, and on opening a little farther, they succeeded in evacuating a quantity of thick grumous blood, and agreed to introduce a canula to keep the opening pervious: this, however, was not retained long; and supposed the opening closed, but had not heard of her since. When I related the accounts of her different accouchments, he remarked, that the escape of water during the operation he performed, could never be accounted for, either by himself or his colleague; but that now he was quite convinced that the meatus urinarius, in the upper part of the vagina, must have been opened, and remained pervious; and through this she must have menstruated, and become impregnated. This also is my opinion, as it could not have occurred in any other manner.

I have consumed much time in searching the works of ancient and modern writers for records of similar cases, but without avail, and have also particularly enquired of my medical friends if they were cognizant of such cases occurring, or remembered having met with them in their various readings; but with a similar result. I have not succeeded in obtaining any proof that the like ever before occurred, or has been recorded in any book.

British Record, Jan. 1, 1848, *p.* 34.

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136.—ON RIGIDITY OF THE OS UTERI.

By Mr. Remington, and others.

[At a Meeting of the South London Medical Society, Mr. Remington related the case of a woman æt. twenty-nine, whom he attended in her first labour. When he arrived, the liquor amnii had escaped, and there were frequent though feeble pains.]

On a vaginal examination, the os was found scarcely open, the head presenting, but high up, and there was considerable pelvic deformity, the pelvis itself being small; the brim contracted antero-posteriorly by the jutting forwards of the sacral promontory; the linea ilio-pectinea sharp; the sacrum much curved; the coccyx turned forwards, and unyielding; the outlet narrowed antero-posteriorly by the projecting coccyx; the arch of the pubis was also diminished. There was little change in the patient's state throughout the day, or on the following morning. There being no constitutional disturbance, and no further dilatation of the os, it was determined to give a fair trial to the natural efforts.

[Next morning, there being little change in the condition of the patient, *emetic tartar* was given in doses of a quarter of a grain every four hours, with the effect, in about twenty-four hours, of slightly dilating the os uteri; but in the evening of this, the third day, the strength began to fail.]

Labour having now been protracted two days and a half, it was agreed to deliver her, and the bladder having been emptied, and the woman placed in the usual position, Dr. Lever made two slight incisions with a knife in the os uteri to relieve the tension, and then proceeded to perforate the head; the child was extracted without more than the ordinary effort on the part of the operator; and the placenta being removed, a dose of ergot was given to ensure contraction, and the patient progressed favourably to convalescence.

The author concluded by drawing attention to the healthy condition of the patient, as conducing to so favourable a termination of the case, as previous disease of the peritoneum or pelvic viscera would have diminished the chances of recovery. He adverted to the propriety of performing an operation, where such is necessary, before much constitutional irritation is set up, and considered the course and termination of the case narrated in no way invalidated the important rule, "to give a fair trial to the natural efforts even in cases of pelvic deformity."

[In the discussion which followed, Dr. Murphy objected to the use of tartar emetic, and thought mechanical dilatation by the fingers admissible.

Mr. Waterworth advocated the use of venesection, with small and frequent doses of antimony.]

Dr. Lever viewed tartar emetic almost as a specific in relaxing a rigid state of the os. In his experience no remedy could be compared to it, especially when followed by a dose of opium. The feeble state of pulse, in the case related, negatived venesection, and, as a general rule, he did not think its use to be as highly recommended as that of antimony, being apt to leave an inert and ill-contracted state of womb, and more tardy convalescence. The necessity of instrumental aid, in the above case, was thought of from the first, and he highly approved of its use not being deferred until those symptoms of exhaustion mentioned by many authors should appear, as in such cases patients rarely would recover the shock of the delivery, and he viewed the successful termination of the present case as attributable to the well-timed interference.

Medical Gazette, Nov. 19, 1847, *p.* 902.

[Mr. Barrett, of Bath, relates the following case:—]

The patient was in her fortieth year, and in labour with her first child. I saw her first on Wednesday morning, June 1st; labour had commenced on the day previously; the pains were slight, but pretty urgent; the os uteri just sufficiently dilated to admit the tip of the finger, was very high up, directed backwards, very rigid, and thick. On Thursday, I found the pains more severe, but the condition of the os unchanged; the liquor amnii had been discharged, and the head presented; the skin was cool, and pulse quiet. A dose of castor oil, with fifty drops of tincture of opium was given; free action of the bowels, but no sleep followed. The next twenty hours produced little change in the symptoms; the pains were more severe, but the state of the os uteri was unchanged; it still would but admit the point of the finger through its thick and almost cartilaginous ring; the head pressed firmly on the anterior part of the cervix; the pulse was full and sharp; she had not slept for forty-eight hours. I bled her to twelve ounces, gave her a grain and a half of opium, and administered an enema. She slept a few hours after the bleeding. Early on Saturday morning the pains returned very powerfully; the os uteri had lost a little of its thickness, but none of its hardness; it was still tilted high up against the promontory of the sacrum, but was dilated to about the size of a shilling piece. The woman had had anasarca of the lower extremities to a great extent for six or eight of the latter weeks of pregnancy, and the labia and external parts in general were very œdematous; the vagina was hot and dry. I again bled her, the blood being buffed and cupped; gave another injection of castor oil and turpentine, which freely emptied the bowels, and directed constant steaming with hot water to the pudenda. Violent pains continued throughout the day: the condition of the os remained unchanged; but the head was lower down at each pain, the cervix being forcibly stretched over it.

At this period my friend, Dr. Samuel Edwards, saw her with me; there was some tenderness of the abdomen; skin was hot; pulse sharp and full, and about 100. At his suggestion she was again bled, and put under complete nauseation with tartar emetic; afterwards a full dose of opium, and another emollient enema were given; the os uteri and cervix were freely smeared with extract of belladonna. The pulse fell to 90; the pains became suspended for many hours, during which time she occasionally slept, and felt comfortable and easy.

On Monday morning, June 6th, the pains (forcibly expulsory) again recurred. An examination, however, shewed no other change in the state of the os uteri, than that it was a little thinner; it was not more dilated, and still felt almost like a bony ring, and resisted, as it had all along done, any attempt at artificial dilatation. Towards night considerable constitutional disturbance set in; the pulse was 110; skin dry and hot; tongue rather brown; the abdomen tender; vagina hot and dry; and the system generally irritable.

It must be admitted that the state of the patient at this time was one calculated to excite considerable anxiety. She had been in labour for five days, but the state of the os uteri opposed completely, as it did, in the first day of the labour, the possibility of the birth of the child. The usual remedies sedulously applied, and anxiously watched, had exercised no influence in overcoming the difficulty; and though till this time, the constitutional symptoms had caused no uneasiness, still now they began to show themselves in such a form as to urge the necessity of the adoption of some measure by which the labour might be terminated; the pains too, were violent and forcing, and the head was so forcibly pressed against the thin and widely-stretched cervix, that I dreaded with each pain, some fearful laceration. At this time the child was living; but even had it been dead, to have practised embryotomy through such an undilated and undilatable os uteri would have been as difficult to the operator as dangerous to the mother.

It was in this state that Dr. Edwards proposed an incision of the edge of the os uteri, and though my own experience taught me nothing of the practice, my confidence in his judgment removed any doubts I may have entertained of its desirableness. The operation was performed in the manner detailed by Dr. Lever, in a similar case published by him. The knife used was a probe-pointed bistoury, and the two incisions were made each on side the mouth of the womb. The patient complained of no pain; some bleeding followed the division. In two hours the constitutional symptoms were materially relieved; the pulse was at 90, and the skin cool; abdomen less tender, and irritability calmed.

An examination four hours after the operation showed but little change in the state of the os, but after a time it began slowly but certainly to dilate, and at eleven o'clock in the forenoon of Tuesday, (the seventh day of labour,) its disc was rather larger than half-a-crown. The corrugated state of the scalp, the disappearance of the caput succedaneum, and the still more conclusive evidence afforded by the stethoscope, showed the death of the child, and we determined upon performing craniotomy. The os continued gradually to yield to the diminished bulk of the head, which each pain forced against it, and the remainder of the labour went on steadily progressing, the pains continuing regular and the patient comfortable, till 11 o'clock p.m., when she gave birth to a female child of the average size. The placenta was expelled in about twenty minutes. No one single unfavourable symptom following to interfere with her speedy and perfect recovery.

Provincial Medical and Surgical Journal, Dec. 15, 1847, *p.* 681.

137.—ON TURNING AS AN ALTERNATIVE FOR CRANIOTOMY AND THE LONG FORCEPS, IN DEFORMITY OF THE BRIM OF THE PELVIS.

By Professor SIMPSON, F.R.S.E.

[In Retrospect, Vol. XV., p. 418, the reader will find an interesting paper by Dr. Simpson on this subject. We there reprinted it from the Monthly Journal in order to show the effects of ether, rather than to elucidate what Dr. Simpson wishes in the subjoined paper to impress upon us, viz.,—the possibility of turning the child in cases of contracted pelvis, instead of performing embryotomy. The case in which this practice was first adopted by Dr. Simpson, was that of a woman, who, in her first labour, had been delivered by means of craniotomy. At the full period of her second pregnancy, labour-pains came on, and in a few hours Dr. S. was sent for, the os uteri being then tolerably well dilated, the membranes entire, and the head above the brim. He says,—]

During the course of the few following hours, no advance being made, I proceeded shortly after nine in the evening, (the labour had commenced in the forenoon,) to make the mother inhale the vapour of sulphuric ether, and to extract the child, as I had previously determined to do, by the operation of turning. The os uteri was so dilated, as not to offer any impediment to the introduction of the hand; the head was pushed aside, and a knee seized with great ease. With this hold the infant was readily turned, and its extremities and trunk drawn down, but the extraction of the head through the distorted brim was a more difficult task. After the arms were brought down, very great exertion in the direction of the axis of the brim was required before the head was extracted; still not above two or three minutes elapsed from the first introduction of the hand till the complete extraction of the infant. It gasped several times after it was born, but full respiration could not be established. Its head was compressed laterally, the left parietal region flattened, and the anterior part of the right parietal bone deeply indented by the pressure to which it had been subjected against the projecting promontory of the sacrum. The transverse or bitemporal diameter of the head at the seat of the indentation, was found, on careful admeasurement, and when held compressed by the fingers, not to be above two and a half inches Hence the conjugate diameter of the brim did not, in any probability, exceed this. The infant, a female, was large, and above the usual size; it weighed exactly eight pounds, the average weight of the female infant at birth being about six pounds and three-quarters. In consequence of being placed under the complete anæsthetic influence of the inhalation of sulphuric ether before the operation was begun, the mother was quite unconscious of pain or suffering during the whole process of the turning and extraction of the infant. She made a recovery that was uninterruptedly good and rapid, and left her bed, dressed, and walked into the next room, on the fourth day after delivery.

The preceding case was, at the time of its occurrence, one of intense interest to me in two points of view. For *first*, it was the first case in which I or any other accoucheur had ever tried the effects of ether-inhalation during labour, and so far it is, I believe, destined to form the commencement of a new and important epoch in obstetric practice. But *secondly*, the case appeared to me to be one of great moment as an apposite illustration of views which I have been previously led to entertain, as to the possibility and propriety of substituting, in some instances, extraction by the feet for extraction by the crotchet—the delivery of the infant by the hand of the accoucheur instead of its delivery by instruments—the lateral compression of the child's head by the contracted sides of the pelvis, instead of its more dangerous oblique or longitudinal compression by the long forceps,—and, *above all, the transient and (not necessarily fatal, depression of the flexible skull of the fœtus, for the) destructive and necessarily deadly perforation of it.*

It is in this second or latter point of view that I propose to consider the preceding and other analogous cases in the present memoir.

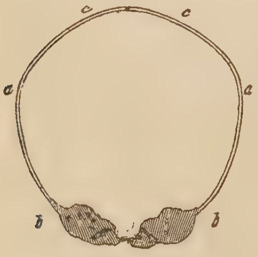
In directing the attention of the Obstetric Society in January last, to the case which I stated above, and its relations to the question of turning, I took occasion to state that I had practised the same operation as an alternative for craniotomy and the long forceps, in other instances in which the head had been morbidly detained at the brim, from the existence of disproportion between the two; and that I believed it to present the following advantages over embryulcio:—It gave the child a chance of life; it was more safe to the mother, because it could be performed earlier in labour and more speedily; it enabled us to adjust and extract the head of the child through the imperfect pelvic brim in the most advantageous form and direction, the head flattening laterally under the traction; the neck (if the child were living or only lately dead,) was so strong as to allow us to exert such a degree of traction upon the obstructed head, that the sides of the cranium might become very greatly compressed, or even indented under it, and that without necessarily destroying the child; and lastly, it was a practice which could be followed when proper instruments were not at hand, and the avoidance of instruments was generally desirable, when it was possible.

Provincial Medical and Surgical Journal, Dec. 15, 1847, *p.* 673.

[Dr. Simpson states that this practice had been suggested to him by studying recorded cases of labour with contracted pelves, when he had been struck with the fact, that when the child presented preternaturally and ultimately passed with the feet first, the labour seemed both easier and safer to both mother and child, than when in the same patients the head presented. Upon what, therefore, he asks, " does this greater facility and safety of footling, as compared with head presentation, in such cases depend?" It depends upon certain points in the configuration of the child, into which accordingly Dr. Simpson enters at length. He says,—]

The form of the infant at birth, has often and justly been compared to that of a cone; the feet serving as the apex, and the arch or biparietal diameter of the head forming the basis of the cone, and there being a gradual tapering and increase of size from the former to the latter point. Consequently, when in cephalic presentations, the head or broad end of the cone once dilates and passes a given point, the narrow remainder of the cone, viz., the trunk and extremities, afterwards pass it without impediment. In fact, both in cranial and in footling presentations,—even in instances of contracted pelvis,—the transit of the body is usually attended with no special difficulty or delay. The obstruction is referrible to the child's head alone; and hence the necessity of accurately studying the obstetric configuration and relations of the fœtal head, in order to be able to overcome the obstruction offered by this part.

Fig. 1.—Vertical section of a fœtal skull, shewing its conical form.



Now, besides that the whole infant is, as I have just stated, of a conical figure, the head taken alone, presents more imperfectly the same configuration; for the basis of the skull is considerably narrower than the arch; or, in other words, its bimastoid diameter, is less than its biparietal diameter, so that the cranium increases gradually in breadth and size, like the whole body, from below upwards.

The biparietal diameter of the head (or vertex) is, in this way, the *basis* both of the cone of the whole body and of the cone of the head taken singly.

[The bimastoid is less than the biparietal diameter, *from half to three quarters of an inch*, the former averaging about two inches and three quarters, the latter three inches and a quarter, or three inches and a half. As then the cranium at its arch, or biparietal diameter, is loose and compressible, while at the base it is quite incompressible, we may gain, Dr. Simpson thinks, the difference of half or three quarters of an inch above spoken of, by varying the method of extraction. He says,—]

Now, when the brim of the pelvis is morbidly contracted at one part,—let us imagine, for instance, its conjugate diameter to measure only three inches instead of four,—then the child, upon being forced down upon it as a head-presentation, meets with difficulties which, probably, no uterine effort could possibly surmount. A round body, the diameter of which is some lines *above* three inches, is attempted to be pushed through an opening measuring *only* three inches. But, turn the child, extract it footling, and let the head pass through the contracted brim by engaging in it, first the base or bimastoid diameter of the cranium, and the difficulty may possibly be overcome; for then we have the head entering the contracted brim of three inches as a body *less* in its diameter than three inches, and capable of having its broader upper portion flattened, and reduced to the size necessary for its complete transit, by the force which we can apply to the already protruded body of the infant, producing the requisite degree of lateral compression of the cranium against the opposed sides of the contracted pelvic brim.

Or, let us take another and perhaps simpler view of the subject. Suppose, for want of a better wood-cut, we take the letter A as a round cone simulating the figure of the infant, the apex of the letter corresponding to the feet of the infant, the base of it corresponding to the biparietal diameter of the head, and the cross-bar of the letter representing the incompressible floor or basis of the skull, and the two divergent feet of it representing the elastic and compressible arch of the cranium. Now, if we desired to pass this round cone A through an oblong aperture O, the diameter of which was somewhat *less* than the diameter of the basis of the cone, should we succeed best by pushing it through the oval opening with itsbasis foremost, or by dragging it through it with its apex foremost? If we extract the cone through the aperture by bringing its narrow end foremost,—or, in other words, if we bring the child by the feet instead of the head,—then two objects are gained; for, first, we have the power of using any justifiable degree of force that may be required, by the command we thus obtain of the protruded and narrow end of the cone; and, secondly, the elastic sides of the base of the cone situated above the cross-bar,—or, in other words, the sides of the cranium itself above its basis,—will yield and become compressed together to such an extent as to enable the collapsed body to pass through the supposed opening. If, on the other hand, we attempt to make the broad basis of the cone, (or the vertex of the head,) to pass first through an aperture less than its own diameters, then we are apt, the more we press, to increase rather than diminish the difficulty attendant upon its transit; for the more force we apply we are liable to render that part which is too broad still broader, by flattening it against the sides of the aperture, and making its limbs and parietes at one point or another diverge and widen, instead of converge and contract. It is true that if we can insinuate *obliquely* or otherwise, the basis of the compressible cone (or the arch of the head,) into the contracted aperture, so as to get *its* sides compressed between the sides of the opening, and consequently its biparietal diameter lessened by the force with which the body of the cone is pushed downwards, a similar object would be gained, but in a more uncertain and imperfect degree. Besides, there is always in this way the chance of making the two sides of the cranial arch, (2 2, *fig.* 2,) spur out, and diverge lower down at *their* basis, in proportion to the amount of force applied to the upper surface of the arch itself, (*c c*, *fig.* 2,) so that while we contract the sides of the arch above by the kind of pressure supplied to it, the direction of that pressure may possibly widen and open the limbs of the arch below, and so far increase, for the time being, the difficulty accompanying the transit of that part.

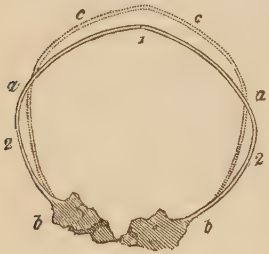


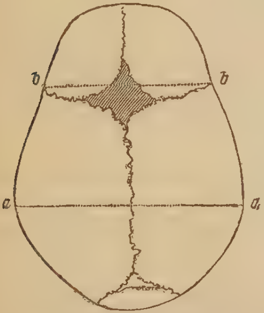
FIG. 2.—Illustrating the effect of pressure upon the top of the arch of the fœtal cranium, as happens when the head presents.

Description of Fig. 2.—The dotted line *c b b c* is the vertical section of a normal fœtal skull, as seen in *Fig.* 1. The outline 1, 3, 2, shews the disadvantageous alteration in form produced by the presentation of the head to a contracted pelvis.

But this transverse or lateral form of flattening and compression of the cranium is very far indeed from being always obtained when the vertex is allowed to present at the brim of a distorted pelvis; for frequently the whole, or the greater mass at least, of the head remains obstinately above the brim, despite the action of the propelling efforts upon it of labour-pains, both dangerous in the amount of their duration, and dangerous in the amount of their force. By bringing, however, the *apex* of our cone, or the narrow diameters of the cranium foremost, we not only improve and simplify the mechanism of the labour by so far converting the entrance and passage of the child's head into the contracted pelvic brim, from a matter of comparative chance into a matter of comparative certainty; but further, we effect, thus, in the course of minutes by turning, what it might require the course of hours or days to accomplish, provided the transit of the fœtal head were left as a head-presentation to nature alone, or to nature assisted at last artificially by the long forceps or crotchet.

But other advantages are obtained by turning, as compared with embryulcio and the long forceps, in the class of cases which we are considering. We not only bring the tapering or cone-shaped fœtal head through the distorted brim, by making its narrow extremity enter first into the contracted aperture, and *afterwards* using the sides of that aperture to compress the elastic parietes of the broader and higher part of the cranium, but in some cases we in this way, I believe, eschew altogether engaging the broadest part of the head (*a a*, *fig.* 3,) in the narrowest part of the contracted pelvic opening,—a circumstance and adjustment that, in a head-presentation, would be otherwise quite unavoidable. For besides being found of a conical form when looked at vertically, the infantile head shews the same configuration also when viewed antero-posteriorly.

FIG. III.—Outline of the fœtal head as seen from above.—(From Chailly.)



The accompanying outline, for instance, of the fœtal head, as seen from above, is an exact copy of that given in Chailly's late work on Midwifery, and shews that while the head is very broad behind in its biparietal diameter, (*a a*, *fig.* 3,) it gradually tapers and diminishes in breadth as we proceed forward to its bitemporal and bifrontal, (*b b*, *fig* 3,) diameters; and its bitemporal diameter is in general fully half an inch less than its biparietal. But, in the mechanism of head cases, the neck, as is well known, becomes early flexed in the labour, so that the chin is brought towards the top of the sternum, and the vertex or upper and back portion of the head first becomes pushed downwards into the pelvic aperture, and thus constitutes the presenting part,—in other words, the broadest part of the cone of the whole child, because the broadest part of the head, or its biparietal diameter, is thus naturally first driven downwards into the pelvic cavity, and is first directed against the contracted brim. The same head, when extracted as a footling presentation through the same distorted pelvis, will in some instances entirely escape, having this, its broadest part, placed and engaged in the narrowest part of the pelvic aperture; for, as the extremities and the body of the child are gradually extracted in the operation of turning, the head, in ultimately adapting itself to the shape of the pelvis, comes to have its bitemporal, and not its biparietal, diameter implicated in the narrowest or conjugate diameter, the parietal protuberances passing into the wider lateral space opposite the sacro-iliac synchondrosis.

In order that the full-sized fœtal head may pass through a contracted pelvic brim we require to have the head flattened laterally, and its sides at its anterior parietal or temporal region collapsed and compressed, The outline *a b b a*, *fig.* 4, is the outline of the vertical section of the infant's skull that I have already given in *fig.* 1. The line 1, 2, 1, *fig.* 4, marks what we may presume, for the sake of illustration, to be the shape and degree of compression to which the head would be required to be reduced in order to pass the contracted pelvic aperture.

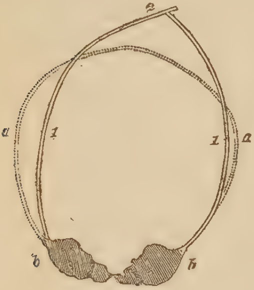


FIG. 4.—Illustrating the effect of lateral compression upon the sides of the arch of the fœtal cranium, as happens when the child is extracted footling.

Description of Fig. 4.—The dotted line *a b b a*, is the vertical section of a normal fœtal skull, as seen in *fig.* 1. The outline 1, 2, 1, shews the advantageous alteration in form produced upon the fœtal cranium by extracting the child footling through a contracted pelvis.

Would this necessary degree of compression be effected more easily and by less amount of force if the head were drawn through the narrow pelvis as a footling presentation, than if it were driven into it as a cephalic presentation? I certainly believe that less power would be required to produce the same degree of lateral compression and collapse in the cranial arch, provided the compressing force was applied, (as in cases in which the child is extracted footling,) directly to the two sides or lateral surfaces (1, 1, *fig.* 4,) of the arch itself, than under the alternative condition supposed. For if the child descended into the pelvic brim as a head presentation, the uterine contractions would drive it against the narrow points of the pelvic brim, so that the reacting compressing power of these points would be applied either to the two upper surfaces of the arch, (*c c*, *fig.* 2,) or partly to one of them, (*c*), and partly to one of its opposite lateral surfaces, (*a a*, *fig.* 4.) In such circumstances the compressing powers would be acting much more indirectly and far more at a disadvantage in effecting the required compression, than if they were applied, as in extracting the child footling, directly and immediately to the sides themselves, (*a a*, *fig.* 4,) that are to be compressed.

"Does the head, (asks Dr. Radford,) elongate more readily upwards than downwards? If only (he answers,) the same degree of extractile force is used, it does not." But what I have stated shews that the same degree of extractile force will produce the desired effect more easily, and as we shall afterwards see, more safely also, when the child passes with the pelvis, than when it passes with the head first. And this I believe, affords us another advantage in the mechanism of footling as compared with cephalic presentations in instances of diminished pelvic brim. We are enabled to produce by it the same amount of compression of the fœtal head by a less expenditure of compressing force, for we apply it to the lateral surfaces or piers of the cranial arch, (*a a*, *fig.* 4,) and not to its pedentures or upper surfaces, (*c c*, *fig* 2,) and we effect a saving of force by the *direction* in which we apply the force.

[The sum of these observations is as follows:—]

1. The fœtal cranium is of a conical form, enlarging from below upwards, and when the child passes as a footling presentation, the lower and narrower part of the cone-shaped head is generally quite small enough to enter and engage in the contracted pelvic brim.

2. The hold which we have of the protruded body of the child, after its extremities and trunk are born, gives us the power of employing so much extractive force and traction at the engaged fœtal head, as to make the elastic sides of the upper and broader portion of the cone, (viz., the biparietal diameter of the cranium,) become compressed, and, if necessary, indented, between the opposite parts of the contracted pelvic brim, to such a degree as to allow the transit of the entire volume of the head.

3. The head in being dragged downwards into the distorted pelvis, generally arranges itself, or may be artificially adjusted, so that its narrow bitemporal, instead of its broad biparietal, diameter, becomes engaged in the most contracted diameter of the pelvic brim.

4. The arch of the cranium or head is more readily compressed to the flattened form and size required for its passage through a contracted brim, by having the compressing power applied, as in footling presentations and extraction, directly to its sides or lateral surfaces, than by having it applied, as in cephalic presentations, partly to the lateral and partly to the upper surfaces of the arch.

Lastly, I may add, as a result of the whole mechanism, that the *duration* of the efforts and sufferings of the mother is greatly abridged by turning, when used as an alternative for craniotomy and the long forceps, and that thereby her chances of recovery and safety are increased. But as this is in itself a matter of the highest moment, in reference to the whole question of the proposed practice, we shall devote a special section to the consideration of it.

Provincial Medical and Surgical Journal, Jan. 12, 1848, *p.* 1.

In the short summary which I have given above of the advantages of turning over embryulcio, I stated one strong reason in favour of delivery by the alternate operation to be this,—" *that it* *was more safe to the mother, because it could be performed earlier in the labour, and more speedily,*" than craniotomy, or the application of the long forceps. And I have the most sincere belief that the practice I propose may be the means of saving much, both of maternal and infantile life, by enabling us in some cases to abridge the mere duration of a difficult labour, so that we may terminate in a few minutes a delivery, which, under other plans of treatment, might still be protracted onwards for hours or even for days. At the same time I am fully aware that when I state my conviction that the mere degree of *duration* and continuance of a labour is, *per se*, dangerous both to the mother and child, and very often fatal even in its influence, I venture to broach a doctrine which stands up alike against the opinion and the practice of some of the highest authorities in the obstetric profession.

[Dr. Simpson gives several tables to shew that the proportion both of maternal and infantile deaths, and of obstetric complications, becomes more numerous as the duration of labour is prolonged:]

"But," says he, "I have brought forward the facts principally for the purpose of shewing that out of them, and in connection with them, there is deducible another all-important principle, in reference to a practical and obstetric operative inquiry of the present nature,—viz., that when operative interference, such as the forceps, crotchet, turning, &c., is required, in order to terminate a difficult and morbid labour, the *time* of the labour at which that interference is had recourse to, regulates the amount of attendant danger much more than the details and effects of the operation itself. In other words, in accordance with the general law already illustrated, the extent of danger or fatality attendant upon operative and instrumental delivery, is regulated in a direct and demonstrable degree by the previous length of time allowed to elapse before the artificial interference is had recourse to; the resulting mortality increasing in amount according as the period at which the operation is performed is proportionally more distant from the date of the first commencement of the labour."

[After some further observations upon the same subject, he concludes:]

1st. That as a general law the amount and proportion of maternal and infantile deaths accompanying parturition are regulated and modified by the length and duration of the labour.

2nd. That the liability to various morbid obstetric complications during and after delivery is modified and regulated by the same law; and—

3rd. That the mortality attendant upon obstetric operations, such as the use of the forceps and crochet, is also strictly modified and regulated by it,—operative delivery being more and more fatal in proportion to the lateness in the course of the labour at which it is adopted; and, on the other hand, less and less fatal in proportion to the earliness in the course of the labour at which it is practised.

Now, the object of the present memoir is to propose that in cases of arrestment of the head at the brim of the pelvis, artificial delivery should be accomplished by turning, instead of being accomplished by the long forceps or craniotomy. And the operation which I thus wish to substitute has, as I have stated at the commencement of this section, this great and high advantage over the two others for which I propose it as an alternative, that, *cæteris paribus*, delivery by turning can, and must, as a general rule, be practised far earlier in the labour, than delivery either by the long forceps or the crotchet; and in proportion as it is practised earlier, so far also will it be practised with greater safety and success. A few remarks upon the time at which the employment of the long forceps or perforator is usually adopted will render this deduction more evident.

Provincial Medical and Surgical Journal, Feb. 9, 1848, *p.* 57.

When the long forceps are used in instances of arrestment of the head at the brim, they are in general never applied till the cranium is thrust and wedged down into the upper pelvic aperture to as great an extent as can possibly be effected by the unassisted uterine efforts, and till symptoms of local irritation, or constitutional re-action or exhaustion offer to appear. But before all this state of matters is brought about, both much expenditure of muscular and vital exertion on the part of the mother, and also much expenditure of time is usually required; and the walls of the maternal passages are liable to have become injured by irritation and compression. Before the assigned conditions are produced, many long hours commonly elapse, each one of them directly and rapidly adding to the chances of danger to the mother.

But it is principally as a substitute for craniotomy that I venture to suggest the operation of turning in instances of arrestment of the head, at or above the brim of the pelvis. And when we contrast the different times as far as regards the duration of labour, at which these two modes of delivery (craniotomy and turning,) would be respectively followed in the same class of cases, we shall perceive still more strongly the advantages of the alternative practice. For turning, as I have just now stated, would necessarily be performed early in the course of the labour, and so far at a period when the danger would be comparatively slight, according to the law of duration which I have attempted to establish. Commit, however, the same morbid cases to the usual rules of management, by which they would be treated under the prospective idea that they would in all probability ultimately become cases of craniotomy, and mark the difference. The labour is allowed to go on from hour to hour, and possibly for one or two long and weary days, in order to give the child every legitimate chance of being, at last, expelled alive, or at least, expelled without operative mutilation. In the meantime, however, the chance of immediate or ultimate danger to both mother and infant increases fearfully in proportion as the labour drags on its duration. How long then shall we allow it to continue before we perforate and break up the child's head? Most modern authorities would answer that question by earnestly inculcating the propriety of not applying the perforator till the child were distinctly and certainly dead, (unless indeed the appearances of danger to the mother were extremely marked and imminent,) for almost all eagerly and properly declare their abhorrence at the idea of "plunging an iron instrument into the centre of the skull of a living being."

Over both the operations for which I propose it as a substitute, —viz, delivery by the long forceps and crotchet, it possesses this great and weighty advantage, that it can be practised at a far earlier, and consequently at a far safer, period of the labour. But it is principally as an alternative for craniotomy that I feel anxious to introduce the operation of turning to the consideration of my professional brethren; and over craniotomy it possesses, in addition to the above, this other all-important advantage, that it offers the child a chance of life, while craniotomy implies the very certainty of death; and that while the existence of the sounds of the fœtal heart, and the continuance of the infant's life, would determine us to postpone, and postpone almost indefinitely, the delivery by embryulcio, the existence of these sounds, and the evidence they give us of the continuance of the infant's life, would determine us to adopt, and form indeed, *cæteris paribus*, the very strongest reason for adopting delivery by turning. In the one operation we would delay, and perhaps delay long, and hence dangerously, the delivery of the mother, because the child was living; in the other operation we would promote and hasten the delivery of the mother on exactly the same grounds on which we postponed it in the first,—viz., because the infant was still living, and might still be extracted alive.

Provincial Medical and Surgical Journal, Feb. 23, 1848, *p.* 85.

[In another number of the same journal, Professor Simpson maintains, in opposition to Dr. Radford, that the neck of the child, if it be living or only recently dead, is so strong as to allow of such traction being used, that the sides of the cranium may become greatly compressed or indented under it; and that such compression is quite compatible with the life of the child. He remarks that experience alone can decide upon this, and relates several cases to prove that experience is in his favour.

Dr. Simpson observes that Dr. Radford, like many other practitioners, has mistaken both in its principles and details the alternative operation above described, and it is on this account that he has entered into it so fully in the present paper. In Dr. Radford's paper upon the subject,* he did not mention Dr. Simpson's name, because, as he tells us, Velpeau was the originator of the practice and expounded his reasons for it. Dr. Smellie also adopted it, and so have many others, for, says Dr. Radford,]

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* See Retrospect, Vol. xvi,, p. 279.

During my practice, I have in several instances heard country practitioners mention that they turned the child when the pelvis was slightly distorted.

To shew that I have been long aware that in some cases of distortion of the pelvis, even when extreme, the child may be brought through in consequence of presenting footling; I will give a short abstract of a case which came before me some years ago, and which, with two or three others which point out the yielding of the pelvic bones, when affected with mollities ossium, during labour, shall be fully reported to the profession.

Case.—Kitty Banks, residing at Bolton by Bowland, aged 36 years, eighth pregnancy, a patient of Mr. Garstang, of Clithero, from whom all the particulars are derived. December 19th, 1835, Mr. Garstang consulted me on the case. Pelvis distorted from malacosteon; shape trilobed; measures from symphysis pubis to sacrum 2 inches and 4-10ths; from sacrum to the angle formed by the bending of the pubic bones, 1 inch and 2-10ths; across between the approximating pubic bones, 3-4ths of an inch. The largest circle to be described does not exceed 1 inch and 3-10ths. There is little difference in the space on either side. My opinion was that the Cæsarean section would be required, and I offered my services, if necessary. January 8th, 1836. Further consultation. February 9th. A statement of the termination of the case. February 10th. A more circumstantial report; in labour six to seven hours; liquor amnii discharged; *left foot*, and a coil of a flaccid, pulseless funis presented; pains very violent, and frequent. The body of the child was forced down, apparently without much difficulty; when the head came to offer, it was deemed right to perforate it, as the child was already dead. It was readily drawn through. The bones of the pelvis were observed to yield during the time of the pressure produced on the child by each pain, and also during its extraction.

On removing the placenta, the pelvis was examined, and each bone found to have assumed its previous distorted relative position.

Provincial Medical and Surgical Journal, Dec., 1847, *p.* 706.

[By the following paper the reader will perceive that Dr. JAMES WILSON, of Glasgow, confirms the opinion of Dr. Simpson. He says:]

When the head, in certain cases of parturition, is prevented from entering the brim of the pelvis from defective form, or insufficient space, are we to resort at once to embryotomy—the general practice; or may we not, with some prospect of saving the child, accomplish the delivery by turning?

For upwards of thirty years I have been in the habit, in such cases, of effecting delivery by turning, and I have good reason to believe that the lives of many children have been saved by this practice, without the safety of the mother having been in any degree endangered.

In my opinion, turning can only be effected safely and successfully under certain conditions. I would not undertake its performance when labour had been long continued—the patient's strength exhausted—the uterine energy gone, or the uterus painfully and permanently contracted; nor would I recommend it when there was reason to suppose the child was dead, the pelvis *very* much contracted below its usual dimensions, or when the attendant was not familiar with the operation of turning.

Such is the deliberate opinion I have formed of turning in such cases; but at this distance of time it is impossible for me to state the circumstances which led me to adopt the practice. I rather think it was in consequence of having met with several breech presentations in the same individual, and where, by permitting the breech to come forward in the two first instances, the labours were tedious and severe, and the children were lost. In the third instance I saw the patient early, and, ascertaining the presentation to be the same as formerly, I introduced the hand as soon as the state of the os uteri would permit, brought down the feet, and the delivery was accomplished in half an hour: the powerful co-operation of the uterus greatly aided in the extraction. The child was quite lively. Two deliveries afterwards in the same individual were managed in the same way, and with like success.

The success attending these cases, led me to make some inquiries, which resulted in the following conclusions. When the head of the child presents at the brim of the pelvis, but cannot enter in consequence of the relative dimensions of the parts, the points of the head pressed upon are likely to be the upper and posterior parts of the parietal bones, and the superior part of the occipital bone. Now, the effect of such pressure must be to lower the arch of the cranium, and to the same extent to increase the transverse diameter of the head—thus augmenting the disproportion between the relative size of the head and pelvis. This may be proved to a demonstration by applying a certain amount of pressure to points above specified of a new-born child's head.

On the contrary, after turning, when the child's head comes to the brim of the pelvis, the parts chiefly exposed to pressure are the squamous portions of the temporal and the sides of the parietal bones. Now, by experiment, it will be found that the result of such pressure is to diminish the transverse diameter of the head,—raise the sagittal arch and elongate the head, as we find occurs when the pelvis is rather narrow, or when the forceps are used. By this change, from a quarter to half an inch of space may be gained, and the head made to pass with comparative ease, when it could not have been made, by any means, to enter the pelvis with the vertex to the brim.

By turning early (and the sooner the better) we have the unimpaired vigour of the uterus to assist us in our extractive efforts:—the benefit of which, in these operations, I fear, is not sufficiently estimated. By turning, we have it also in our power to bring the head into the best possible position for being brought through the varying diameters and changing axis of the pelvis. Besides, we can safely exert a considerable degree of extractive force by means of the body of the child, and that more effectually than we can do with the crotchet. Oftener than once I have been obliged to turn after the head was perforated, in order to finish the delivery when it could not be accomplished by means of the crotchet.

[Since in any case we cannot ascertain the exact size, form, and degree of ossification of the fœtal head, no rule in practice can be laid down from the mere measurement of the pelvis.]

Without trusting to the measurement alone to guide us in our mode of acting in these cases, perhaps the best practice is when we find that, after the uterus has been acting powerfully, and as we think properly, for a due period of time, and the head does not appear capable of being forced into the pelvis, to decide upon the steps to be taken. What are we to do? Are we at once to perforate the head, or permit the labour to go on, as some advise, till the child is dead, and probably also the soft parts of the mother so much injured as to prevent her recovery? or may we rather not resort to the less repulsive expedient of turning, with some chance of saving the child, and without adding to the risk of the mother?

Dr. Dewees objects to turning in such cases; but, in my opinion, his admissions amount to a recommendation of turning, at least so far as regards the mother. He says, "It will therefore follow that turning is, and must always be, of doubtful efficacy as regards the child—as one calculated to relieve the mother, it may in many instances be successful—or if the practitioner has been debating within himself the comparative merits of the crotchet or turning, the latter will unquestionably merit the preference, as it gives a chance, though a forlorn one, to the child."

An objection urged against turning, is the difficulty connected with its performance. I grant that it is much more difficult than perforating the head; but surely this is no good reason for destroying the child. Although turning is a difficult operation, a perfect knowledge of it, and dexterity in its performance, may be acquired without any extraordinary efforts. But it is said we do not always save the child by turning,—true; but we never can save it by the crotchet. It is further objected, that we cannot always extract the head entire after turning,—true also; but in such cases, when the body is born, we can perforate the head behind the ear and evacuate the brain.

The use of the long forceps has been recommended by some as preferable to turning, but experience has led me to discover that the forceps are altogether inapplicable when the parietal bone overlies the pubis to any degree, as they cannot be placed over the sides of the head, which are the points we wish to compress. The only way in which the forceps can be passed in these cases is by the sides of the pelvis; consequently one blade of the instrument is applied over the face or forehead, and the other over the occiput. Now, compression by forceps so placed, will shorten the long axis of the head, but it will extend the transverse, and thus increase the disproportion which exists between the head and the conjugate diameter of the pelvis, and augment the difficulty we were solicitous to overcome.

There is not the smallest doubt that the crotchet has been frequently used when it ought not to have been. I believe there is no practitioner of experience who has not been sent for to sanction the use of the perforator after turning or the use of forceps had failed, where by another trial, and better directed use of these expedients, a living child has been delivered.

From these, and other facts to which I might refer, it is to be feared that embryotomy is too lightly thought of; and, in conclusion, permit me to state, that our practice in these matters contrasts very strongly and unfavourably with that of criminal courts in cases involving life or death. With us, the destruction of the life of a child is often determined upon even without the formality of a regular consultation; whereas with them such is the importance attached to life—even when that life is loaded with imputed crime —that the greatest talent in the land, and the most respectable of the whole community, are summoned to judge and bear witness in the cause, so that life be not sacrificed without the most undoubted proof of guilt.*

Monthly Journal, May, 1848, *p*. 778.

[At a meeting of the Westminster Medical Society,]

Dr. MURPHY related a case of midwifery in illustration of a principle laid down by Dr. Simpson, that when the fœtal head was arrested in the brim of the pelvis, turning was preferable to the use of the long forceps. Dr. Murphy's patient had been in labour twenty hours; the head of the child was arrested in the brim of the pelvis, which was contracted to less than three inches diameter; the pelvis was also contracted at its outlet by the direction of the lower part of the sacrum and coccyx, and by the rigidity of the perinæum. He attempted to use the long forceps, but could not get them properly applied over the head, on account of the angle at which they were obliged to be used, owing to the obstruction offered by the perinæum. He consequently delivered by turning, which he accomplished with great difficulty. The child was dead from the time it took to extract the head; but he believed that had it not been for the obstruction at the outlet of the pelvis, it might probably have been saved. Chloroform was used in this case, but not to the production of a full effect.

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* I consider it proper to state, that this paper was written in answer to certain queries proposed to me by Professor Simpson, of Edinburgh, in September last, respecting the propriety of turning in these cases. It was never sent to Dr. Simpson, because I continued engaged in testing the compressibility of the heads of new-born children. Dr. Simpson kindly sent me his papers on this subject last month. They had been sometime published, but I avoided seeing them while I was making my experiments, lest his opinions should influence my conclusions; and it gives me great satisfaction to find, from the perusal of these very excellent papers, that our views and illustrations are so similar. Whatever may be the value of the practice recommended, Dr. Simpson has the merit of first giving it publicity.

Lancet, March 18, 1848, *p.* 312.

138.—CASE OF CÆSARIAN OPERATION.

By John Goodman, Esq., Manchester.

[The patient, Mrs. Sankey, after having given birth to three living children, became affected with mollities ossium, and at her confinement about five years ago, was delivered by craniotomy. On the 19th of November, 1845, Mr. Goodman received a message that she was again in labour, having gone to the full period of pregnancy. He says:]

On examination, per vaginam, I perceived that the contraction of the pelvis had already assumed a most formidable character; the promontory of the sacrum having borne down upon, and considerably decreased, the antero-posterior diameter. The acetabula were forced inwards and upwards, in the direction of the sacrum, and the tuberosities of the ischium were actually brought into apposition, but slightly separated again at the point where the rami of these bones communicated with the pubis; producing, with the posterior portion of the outlet, the form of the figure 8.

The principal passage was discovered to be situated superiorly, between the promontory of the sacrum and the converging ossa ilia; and its greatest diameter from one projection of the bone to another was not more than one inch and a quarter; the least, not more than one inch; and these could only be reached by the finger with the greatest difficulty. The os uteri could not be touched by any manipulation. The remaining passage was contracted to about three quarters of an inch; and the external outlet was also considerably diminished by the junction of the ossa ilia. Having fully explained to the husband the true nature of the case, and impressed upon him the utter impossibility of effecting delivery by the natural means, and that the only chance of saving the life of either the mother or the child was by resorting to the Cæsarian section, I suggested the propriety of procuring a second opinion for the purpose of corroborating my statements, and Dr. Radford was accordingly fixed upon.

Upon Dr. Radford's arrival, Mrs. S. had been in strong pains for three hours, and after the necessary explanations, he fully coincided with me as to the necessity of the operation. After due preparations had been effected (in the accomplishing of which I have to thank him for much kind assistance), I proceeded to make the necessary incisions, about 3 a.m. The outer integument was divided by an incision of about nine inches in length, passing a few lines on the left side of the linea alba and umbilicus. This being effected, the uterus was freely and fully exposed, and I immediately made an incision in its walls to the extent of the former opening; the margin of the placenta was ascertained to correspond with the incisions. Dr. Radford seized the infant whilst I dislodged the head from the uterine cavity; and thus a fine living child was preserved from certain death.

I proceeded to remove the placenta as rapidly as possible, and by moderate pressure, succeeded in reducing the uterus to its proper locality; at the same time carefully guarding against the protrusion of the intestines into the uterine cavity.

The disarranged intestines were restored to their normal position by Dr. Radford, whilst, with the interrupted suture, I closed the external wound, without attempting the application of any ligatures to the uterus. It is scarcely necessary to state, that the ordinary dressings of adhesive plaister and bandage were applied. In an hour or two it was perceived that a portion of intestine protruded between two of the sutures, which was immediately and carefully reduced. Ordered:

> Mucilag. acaciæ, capiat cochl. 2 vel 3 magn. ter in dies. ℞. Ext. hyoscy. 10 gr. hora somni sumend.

After this administration, the patient became more than ordinarily composed. On the following day the symptoms were by no means severe, the pulse being 90, tongue clean, skin moist, and the urine evacuated; had some sleep, and the infant was doing well. On the 21st no alvine evacuation had occurred, but there was vomiting of a black and coffee-coloured fluid. An enema of spir. terebinth. and gruel was ordered to be administered through the œsophagus tube, and introduced as far as the sigmoid flexure of the colon. On the 22nd, the bowels not having responded, and the vomiting still continuing, ordered:

> ℞. Magnes. sulphatis, six drachms; magnes. calcin. two drachms; tinct. card. comp. one drachm; aq. cinnam. three ounces. M. Capiat cochl. magn. tertia hora. Repet. pulv. vespere.

To our great satisfaction these remedies induced a copious evacuation, and the vomiting ceased.

[The sutures gave way, leaving a large surface to heal by granulation; but notwithstanding this, she continued to improve until Dec. 6th., when excessive flatulence followed the imbibition of some draught porter. By the distension of the bowel the sore was broken open, and a portion of intestine protruded through a fissure in the sore in the left iliac region. It could not be returned, and an artificial anus was the result. To effect the obliteration of this orifice, every measure that could be thought of, was had recourse to;—as paring the edges, the application of nitrate of silver, and the most careful coaptation of the edges, but for some time without effect. At length Mr. Goodman proposed the following plan:]

Let the edges of the wound be again touched with the nitrat. argent.; let two straps of adhesive plaister, made of strong cloth, be passed round the body of the patient, so that their terminating edges may reach just as far as the edges of the wound; let a bandage of common calico of five inches in breadth be made, with proper hip gussets, so as to reach entirely round the body of the patient, to the same length as the adhesive plaister; let four or five buckles, or straps, be attached to the termination of the bandage, so that it may be employed to draw the edges of the wound together; let the terminations of the adhesive plaister and of the bandage *be sewed together* by a few running stitches, that by drawing together the extremities of the bandage, the plaister may be drawn simultaneously, and with it the skin and edges of the wound, which are adherent beneath. A small portion of lint was placed upon the artificial anus; the straps were tightened; and the edges of the wound were, by this means, brought into perfect apposition; and on the following morning I had the satisfaction to observe the *entire absence* of fæcal matter. The straps were now slightly loosened; the lint removed, the sore washed by a small sponge and water, and a fresh portion applied; the straps were again tightened, the edges being still in apposition, and this state of things was ascertained to be permanent. Week after week a diminution was observed in the amount of fluid which escaped upon any considerable movement of the patient (who never went down stairs), and so satisfied was the patient with the efficiency of the bandage, that she continued to wear it to the period of her death; and at the end of twelve months not more than half a teaspoonful of a serous fluid could be discovered. From the exceedingly propitious result of this case, I cannot resist the opportunity of recommending this contrivance in all cases of a similar nature; it may likewise be adopted where it is intended to dispense with the suture, and especially in all cases of abdominal wounds, either from accident or surgical operation, in which it will prove a powerful adjunct to the ordinary sutures, if it do not render their employment entirely unnecessary.

[The child, we are told, died of a severe bowel affection, when rather more than seven months old.

On the 25th September, 1847, Mr. Goodman was informed that notwithstanding his earnest remonstrances, his patient had again become pregnant. The induction of abortion being resolved upon, secale cornutum and infus. sabinæ were given in frequent doses until the 29th of October, when appearing to produce no effect, they were discontinued. A few weeks afterwards, however, a fœtus of about two months' growth was aborted; and on the third day from the abortion, the placenta, which had been retained, was extracted. The patient gradually sank, and died on the 12th of December.]

Mr. Goodman's Monograph, p. 7, *in British Record, Feb.* 15 *and March* 15, 1848.

139.—*Erysipelas a Cause of Puerperal Fever.*—By R. C. West, Esq., Hogsthorpe, Lincolnshire. [During his attendance upon a mild case of erysipelas of the face, Mr. West had two midwifery cases: both these patients recovered without a bad symptom. But the case of erysipelas became aggravated, and terminated fatally; a few hours before the death, Mr. West made some punctures in the face, and while thus engaged was summoned to another labour; this patient had puerperal peritonitis, but recovered. One day after passing the catheter for her, Mr. West went to another midwifery case; this woman also shortly took the disease and died. Mr. West draws the following conclusions:]

First. That as the cases attended on the 6th and 7th of January, recovered without the appearance of any unfavourable symptoms, a form of erysipelas, which may subsequently in its *malignant* and almost *putrid* stage originate puerperal fever, will not do so in its *early* stage.

Secondly. That as the disease did not come on in the same patients, notwithstanding my visiting them after attending the erysipelatous case when the symptoms *had* become formidable, the merely taking a lying in woman by the hand will not originate the disease.

Thirdly. That as the woman attended on the 15th of January recovered without any symptoms of the malady, although I might at the time, be supposed to be tainted with both the erysipelas and the puerperal disease of Mrs. T. T., it requires something more than a mere *visit* to a parturient woman to communicate the disease from one puerperal patient to another.

Fourthly. That, bearing in mind the above suppositions, the circumstances immediately preceding and accompanying the attendances on both Mrs. T. T. and Mrs. R. B., go to prove that it requires actual contact of the accoucheur's infected hand with the mucous membrane of the vagina, both to originate and communicate the disease. (Query—would not the heat and pain of the vulva in the first case confirm or strengthen this supposition ?)

Fifthly. That the slight manner in which the disease appeared in the woman attended on the 23rd, (nothwithstanding I was still passing the catheter daily from Mrs. T. T., and had but just returned from a visit to Mrs. R. B., the latter being at the time almost typhoid), would serve to prove that ablution, change of clothes, chlorides, &c., are of some little avail.

Sixthly. That erysipelas may originate a *mild* form of puerperal fever, which may in its turn communicate a *more malignant* form. (In the two cases here alluded to, the symptoms in the commencement were nearly the same, the occurrence of dysuria in them both being somewhat remarkable; the fatal difference was in their *terminations*,—typhus and death in the one, gradual recovery in the other.)

And, *lastly*, that a puerperal fever, originating from a case of erysipelas, is not *necessarily fatal.*

Provincial Medical and Surgical Journal, March 8, 1848, *p.* 117.

140.—*On Amenorrhœa, &c., as Affections of the Ovaries.*—By Dr. W. Tyler Smith. Amenorrhœa and amenorrhœal sterility are clearly affections, not of the uterus, but of the ovaria. When we give emmenagogues empirically, with a view to excite the menstrual flow, we place medicine far in the rear of physiology. The essential cause of amenorrhœa is the absence of the periodic ovarian excitement, and the maturation of ova. We can only cure amenorrhœa by bringing the ovaria into that condition which admits of their periodic excitement and the extrusion of ova, and this we must do either by local or general stimuli, or both. If in a case of amenorrhœa we paint the inner surface of the uterus with nitrate of silver, as some have recommended, or inject a solution of ammonia, and so produce the uterine secretion, we do not cure the amenorrhæa, unless, indeed, these agents affect the ovaria at the same time; we, in fact, only remove a *symptom* for the amenorrhœa; the absence of the menstrual flow is a *symptom*, and not the *disease*. We want a new term, which shall include both the ovarian and uterine conditions of this disorder.

In dysmenorrhœa, or painful menstruation, the greater portion of the pain consists of ovarialgia; the deep lumbar pain is decidedly ovarian, and not uterine. Many women suffer so much lumbar pain at each menstrual period. that it resembles, and, indeed, almost amounts to, a monthly attack of ovaritis. Almost all women in the better classes suffer so much pain and disturbance from menstruating, that we may almost say that menstruation, like parturition, lies in debateable ground, between physiology and pathology; but of this more hereafter. Part of the pain of dysmenorrhœa, then, is ovarian, and that which is uterine is only symptomatic of ovarian disorder. In dysmenorrhœa, there is doubtless induced a pathological state of the uterus; but there would be no uterine excitement without previous excitement of the ovaria. On the other hand, we have seen patients in whom the uterus is wanting, from congenital deficiency, have all the ovarian pain of dysmenorrhœa. Uterine disturbance must be considered as a secondary condition—an aggravated symptom of ovarian excitement in painful menstruation. Of one part of the uterine pain of dysmenorrhœa, I have a word to say—I mean, that which women call the bearing-down pain, and of which they complain so much from the pubes downwards to the knees. This bearing-down I believe to be a tenesmus of the os and cervix uteri; it is most frequent and severe in women who have borne children, and in whom the os and cervix have been developed. I have before directed your attention to the points of similarity between the healthy actions of the various sphincteric muscles; you will find the pathological analogies equally interesting. The tenesmus uteri is analogous to the tenesmus of the bowel, or the tenesmus of the bladder. These spasmodic affections of the outlets of the sexual, urinary, and intestinal canals, are comparable with many other spasmodic symptoms. Thus, the globus hysterici, or sphagiasmus, is a contraction of the pharynx, and the laryngismus affecting the larynx, and the form of cardialgia dependent on contraction of the cardia, are analogous affections of the respiratory and digestive tubes. Of course, where there is disease of the os and cervix, the tenesmus uteri will be more distressing, and will often require the chief part of our treatment, yet the ovarian excitement in the back ground must not be forgotten. Its pathological synergies are quite as decided as those of a physiological kind.

But the most serious disorders of menstruation are the hysterical or epileptic convulsions, which are sometimes excited by the ovarian irritation. The first attack of epilepsy frequently invades women at the coming on of the catamenial periods; young girls are liable to convulsive attacks on the first appearance of the catamenia; and in confirmed epileptics the fits are always most violent and prolonged during the accession of the periods. *Ovarian irritation is, I am persuaded, the most important of all the causes of epilepsy in the female.* Ovarian irritation is also a fruitful source of hysterical convulsion, and there is no other state of the economy in which the fits of hysteria and epilepsy run so much one into the other, and where the diagnosis requires to be made with equal care. In these cases it is not so much the uterine as the ovarian excitement which is the cause of the convulsion. It often happens that the fits of epilepsy occur before the uterine secretion, when there is no uterine disturbance, and cease immediately on its appearance, the secretion from the uterus effectively depleting the neighbouring ovaria.

In all these cases the treatment must be, not merely that which removes uterine disorder, but that which relieves undue ovarian excitement and irritation, both in the intervals between the periods and in the periods themselves. In the pathology as well as in the physiology of menstruation the first place must be given to the ovaria.

Lancet, Feb. 19, 1848, *p.* 203.

141.—*Case of Ulceration of the Lining Membrane of the Uterus, accompanied by Pregnancy..*—By Dr. C. Clay, Editor of the British Record. [Ulceration of the lining membrane of the uterus is a very rare disease; a few cases, however, are on record, but none in which, as in Dr. Clay's, pregnancy took place. The patient had been under treatment for two years before Dr. Clay was consulted. He says:]

The principal symptoms before my attending the case, were occasional and excruciating uterine pains; the uterus itself considerably enlarged, and of a soft spongy feel; its size twice that of a large orange; when pressed upon over the pubic region was painful to the touch, which pain was increased when the os and cervix uteri were examined, per vaginam, by means of the finger. Whenever such examinations were instituted, they were followed by severe pain and increased discharges. These were irregular and sometimes small in quantity, so that frequently for days together they appeared as if about to cease. Such cessation, however, was always accompanied by these concomitants; viz., enlargement of the organ—

greater pain and tenderness—and a sudden discharge of accumulated matter. When this last occurred in any quantity, it was invariably streaked with blood. The character of the matter discharged was most decided pus, and highly fœtid. The constitution suffered severely, the countenance was sallow, the body emaciated, and the patient so weak, that it was with great difficulty she could move about the room. Every method of treatment that could possibly be devised was practised, so as to improve the constitution; and washes of various descriptions had been applied by syringe. But every attempt failed in affording any but the most temporary relief, and her case was looked upon as hopeless. Two eminent physicians in London were consulted, but with the same result, and her mind was prepared for the worst. *She was in this condition when I was called in for the first time*, and the case certainly appeared to be rapidly approaching its last stage. What rendered it still more lamentable was the depression of mind, caused by a sudden transition from a state of comparative affluence, to a very slender means of subsistence. This, combined with the cares attendant upon a family of small children, told terribly upon her weakened frame.

In order to labour under no misconception as to the real nature of the case, the speculum was applied, and the os uteri ascertained to be enlarged, mal-shaped, and of a dark liver colour. When the speculum was introduced the parts were well washed by means of a powerful syringe, and a stronge light brought to bear on the uterine orifice. Pus was distinctly seen issuing in considerable quantities from the os uteri, and occasionally streaked with blood. The os and cervix uteri were very tender and painful when touched, and much increased in size. It must be borne in mind that this case had already existed, in a greater or less degree, for more than two years. For my part I imagined that nothing but palliative treatment could relieve the patient, and I accordingly ordered injections, containing nitrate of silver, sulphate of zinc, creosote, &c., &c.

[The nature of the discharge was by these means temporarily improved, and the pain was controlled by the administration of morphia. The uterus gradually increased in size, jerking movements resembling those of a fœtus were felt, and at length the fœtal circulation was heard; and both Dr. Clay and Dr. Radford were satisfied of the existence of pregnancy, though the os was unclosed, and a large bougie was passed at least four inches into the uterine cavity. Labour came on at about the seventh month, and a small emaciated, but living, child was expelled. A year after delivery, the discharge still continued, but the pains were much alleviated.]

British Record of Obstetric Medicine, April 1, 1848, p. 135.

142.—*On Inflammation and Abscess of the Uterine Appendages.*—By Dr. Henry Bennet. [This disease has usually been considered to be all but characteristic of the puerperal state; Dr. Bennet, however, thinks that it is not at all uncommon under other circumstances, having hitherto been often confounded with acute or chronic metritis, or iliac abscess. He says:]

The principal difference that exists between the puerperal and non-puerperal forms of inflammation is the the following:—In the former, owing, probably, to the increased quantity of fibrin contained in the blood, there is a great tendency to inflammation. Hence, if the structures contained in the lateral ligaments are attacked with inflammation, the tendency of the latter to invade the peritoneal folds themselves, and the surrounding tissues, gives rise the formation of large pelvic inflammatory tumors, abdominal adhesions, and perforations, often ending in death. In the non-puerperal state on the contrary, inflammation of the uterine appendages seldom extends to the peritoneum, and the purulent formations nearly always escape, in a latent manner, by the rectum or vagina. In this form of inflammation of the organs contained within the folds of the lateral ligaments, the element most frequently attacked is the cellular tissue which separates the peritoneal folds, and surrounds the ovaries, round ligaments, and Fallopian tubes. It may be produced by any cause which exaggerates the vitality of the uterine system. The author has seen it occur frequently from ulcerative diseases of the cervix, or from a severe fall. The inflammatory tumefaction to which it gives rise may be attended with sufficient swelling to be recognised by pressure over the abdominal parietes; but an accurate diagnosis can only be formed by examination per vaginam. It may terminate by resolution, but more generally by suppuration, and the discharge of pus by the rectum, vagina, or bladder, or by perforation of the abdominal parietes. When this takes place, however, the disease is not brought to a close, but during a longer or shorter period the patient continues to discharge pus in a latent manner, and to suffer from the symptoms of chronic uterine or pelvic disease.

[With regard to treatment, Dr. Bennet insists on the importance of a correct diagnosis; since in acute metritis, the disease with which inflammation of the ligaments is most liable to be confounded, it is not of such paramount importance to subdue the inflammation so rapidly. He would apply leeches repeatedly and at short intervals on the abdominal parietes over the seat of inflammation; enforce complete rest, use cathartic, mercurial, and other active antiphlogistic treatment. In the chronic form of the disease, internal leeching and vaginal injections may be used, and a more tonic plan of treatment adopted.

When this paper was read at the Medico-Chirurgical Society, Mr. Acton stated his belief that these inflammations of the Fallopian tubes and ovaries were analogous to swelled testicle in the male, and frequently came on as a sequence of gonorrhœa. The adhesions produced by these extensions of gonorrhœal inflammation he believed to be a frequent cause of the sterility of prostitutes. Dr. Bennet, however, could scarcely adopt this interpretation. He said:]

There was not that continuity of tissue between the mucous surface of the female genital organs and the ovaries that there was between the urethra and the testicles. If therefore it occurred under these conditions, it must either take place by metastasis, or by the extension of the inflammatory atmosphere to the lateral ligaments. When inflammation did occur in the uterine appendages in cases of virulent gonorrhœa, he (Dr. Bennet) should be inclined to adopt the latter interpretation, and to attribute its origin to the mere extension of the inflammatory action from the vaginal or uterine mucous membrane to the other parts of the uterine system.

Medical Gazette, Feb. 11, 1848, *p.* 243.

143.—*On Varicose Ulcer of the Os and Cervix Uteri.*—By J. Whitehead, Esq., Surgeon to the Manchester and Salford Lying-in-Hospital.—This ulcer is generally met with in women of the bilious temperament and hard fibre, who have been subject to piles and profuse menstrual discharges, and to derangement of the biliary organs. The premonitory condition of the parts consists in a hardened and hypertrophied state of the cervix, which is traversed in various directions by a number of tortuous, dark-coloured trunks, about the thickness of a probe or a crow's quill, raised above the surrounding surface. Larger and more prominent points are here and there noticed, indicating the situation of inosculation of one branch with another; and, generally, at one of these points the ulcerative process is set up, which soon extends through the coats of the vessel, and escape of blood, in greater or less abundance, immediately ensues. The ulcer, which is not long after in being developed, presents an uneven, livid aspect, with irregular margins, near which a few tortuous vessels may be seen ramifying; it now secretes a quantity of pus, and often has small, dark clots of blood or fibrin, the size of a pin's head, lying loose upon the surface. It usually occupies but one labium, the anterior more frequently than the posterior; but sometimes the whole circumference of the cervix is implicated.

Mr. Whitehead remarks that the lesion of the veins of the cervix sometimes extends itself, inducing a general uterine phlebitis, which almost inevitably occasions abortion. We do not know this disease ourselves as occurring during pregnancy; and we wish that Mr. Whitehead had related the case or cases, on which he founds this important remark. The varicose ulcer causes much local and constitutional distress; and the discharge which accompanies it is at first glairy, then brownish and purulent. Spurious menstruaation, during pregnancy and lactation, is said to arise from it; labour is complicated with hemorrhage; and the lochia are profuse, and last for several weeks beyond the ordinary time. The treatment, according to our author, includes bleeding from the arm and local bleeding by leeches or cupping; the patient should strictly keep the recumbent posture; and 3 to 5 grains of calomel, with hyoscyamus or opium, followed by a saline aperient, should be given. The local treatment consists in applying to the ulcer a strong solution of nitrate of silver; which is to be changed, after the acute symptoms have subsided, for the solid caustic. The discharge of blood is to be arrested by a strong solution of sulphate of zinc, with vin. opii and tincture of matico, applied directly to the diseased surface. "And this applies equally in all cases of passive hemorrhage, when the discharge is furnished from ulcerated surfaces, as well as in other chronic discharges, whether sanguinolent, purulent, mucous, or watery, issuing from the neck of the uterus." We may add, for ourselves, that gallic or tannic acid in solution, or incorporated with some ointment, in the shape of a vaginal suppository, have proved the most generally useful remedies for this purpose. This form of ulcer, in our opinion, when seen during pregnancy, is a local exponent of a general congestion of the uterus; and we believe that a simple granular ulcer may assume the characteristic marks of a varicose ulcer to the sight merely, from the placenta being fixed and formed near the neck of the uterus.

British and Foreign Medico-Chirurgical Review, April, 1848, *p.* 468

144.—*On Preternatural Elongation of the Cervix Uteri.*—By Dr. J. M. Coley, Senior Physician to the Pimlico Dispensary, &c.—[This state, Dr. Coley says, is occasionally a consequence of passive congestion of the uterus, and occurs at other times in conjunction with the fibrous tumour of the uterus. Dr. C. observes:]

The cervix is not only extended in this disease, but is also much increased in diameter, being occasionally much longer and thicker than the largest teat of a cow; which it also much resembles in shape and structure. The situation of this elongation will be found immediately beneath the urethra. It is perfectly free from all tenderness, and the only symptoms indicatory of the disease are, distressing sensation of dragging, or prolapsus, accompanied with pains in the back, which continue whilst the patient preserves the erect position. As far as my own observation has extended, pregnancy never occurs during the continuance of this preternatural condition of the cervix. The cause of this will at once resolve itself to those who are conversant with the natural structure, the position, and the physiology of the os and cervix uteri, in connexion with the process of conception.

Treatment.—When this infirmity is connected with passive congestion of the uterus, it may be greatly relieved by the treatment I recommended for the latter disease, viz., the internal use of iodide of iron, or ioduret of mercury, in conjunction with rest in the horizontal position. It is to be observed, however, that in established cases this treatment *only* affords *relief*, a permanent hypertrophy remaining to a considerable and inconvenient extent. Much benefit is also derived from the introduction of a soft sponge, which must be removed at bed time. The dragging sensation is in some cases so severe, as to require the following decided treatment, and which I have invariably found has effected a radical cure, viz., the excision of the superfluous elongation; an operation perfectly safe in the absence of specific disease.

[Dr. Coley relates two cases to illustrate the above remarks: the medicines above recommended were given, and in one case the exuberant portion of the cervix was excised, with speedy relief to all the symptoms.]

British Record, Jan. 1, 1848, *p.* 28.

145.—ON RETROFLEXION OR RETROVERSION OF THE UNIMPREGNATED UTERUS.

By Professor SIMPSON.

[Dr. Simpson applies the generic term of Retroversion to all posterior displacements of the uterus; the difference between the varieties, which are of every shade, being one of *degree*, and *not* of *kind.*

Retroversion, then, of the unimpregnated uterus, formerly supposed a rare occurrence, is in reality a very frequent one. Its functional symptoms are, for the most part, those of uterine disease in general: since therefore they may indicate other affections besides retroversion, and since the latter may exist without almost any of them, the functional symptoms are far inferior in importance to the physical signs. These are thus enumerated by Dr. Simpson:]

Speculum.—The employment of sight, by means of the speculum, assists us in no respect in the diagnosis of retroversion.

Tactile Examination.—On an accurate vaginal examination we feel an apparent projection of a solid tumour between the uterus and rectum, when applying our finger, or fingers, behind the cervix uteri to the *posterior* part of the upper reflexion, or roof of the vagina. The same firm mass is felt through the anterior wall of the bowel in making an anal examination. The tumour or mass feels smooth and roundish on its surface; is often sensitive on pressure, more especially if the retroversion is recent, or when the posterior wall is (as often happens) congested and engorged; is generally capable of being moved more or less easily by the finger; and varies in size according to the degree of displacement, and the morbid or healthy state of the uterine walls.

The os and cervix uteri may be displaced forwards, or they may maintain their usual position. The whole body of the uterus is often prolapsed and lower than its natural situation; but occasionally it is quite normal in these respects.

[To determine whether this tumour is the displaced fundus and body of the uterus, we may manipulate with the fingers of one hand in the vagina, and the other on the pubes or in the rectum; but, says Dr. Simpson:]

A far more simple and certain method is to determine the precise situation of the fundus and body of the uterus, not through either the intestinal canal behind, or the urinary canal in front, but through the intermediate genital canal itself. The proper canal of the uterus is, of course, too narrow to allow us to introduce our finger into it; but by passing into it a slender metallic finger (if we may so speak), we can easily by it ascertain, amongst other matters, any change in the *direction* of its cavity, and consequently in the direction of the body and fundus of the uterus itself. The employment of the uterine bougie readily enables us to do this.

Examination by the Uterine Sound or Bougie.—Some years ago I gave a full account of the instrument, and the mode of using it.* It has the configuration of a slender male catheter; tapering in form; knobbed at the extremity; divided into sections, so as to measure, when required, the length of the uterine cavity; and provided with a handle, smooth on its posterior surface and roughened on its anterior, in order to make the operator constantly aware of the position and direction of the point and concavity of the instrument, when it is passed into and hid in the uterine cavity.†

This instrument can be easily and readily passed into the uterine cavity, so as to enable us to measure its depth; to examine, more distinctly than we have otherwise the power of doing, its fundus, body, and cervix; to ascertain the presence of strictures in the canal; diseased states of the cavity, and walls of the organ, &c. I have used it daily for five or six years past, and have never, in any instance, seen any serious irritation, or any bad result to the uterus, follow its employment; whilst it has enabled me and others to detect and discriminate morbid conditions of this organ, that were, by any other means, entirely beyond the reach of correct diagnosis.

Its power of detecting retroversion of the unimpregnated uterus depends, as I have already stated, upon its directly and easily enabling us to ascertain the *direction of the uterine cavity*, and hence of the body and fundus of the uterus, which form the walls of that cavity.

When the uterus is in its normal position, and is placed with the long axis of the organ, and consequently the long axis of its cavity, in a line parallel with the axis of the pelvic brim, the point of the bougie, when introduced into the uterus, passes upwards and forwards in the direction of the umbilicus; and the concavity of the instrument (or the rough side of its handle) is directed towards the symphysis pubis. When, however, the uterus is retroverted, the point of the instrument, instead of passing up vertically and forwards, is resisted in that direction, and can only be passed horizontally and backwards towards the hollow of the sacrum; its concavity and the rough side of its handle thus looking towards the sacrum instead of toward the pubis, and at once showing the altered position of the cavity, body, and fundus of the uterus.

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* See Monthly Journal of Medical Science for 1843, p. 703, and Retrospect Vol. 8.

† The normal length of the cavity of the healthy uterus is two and a half inches, and at that point the bougie is marked, by a single elevation or knob, which can be readily felt when the instrument is under use, and at once advertises the practitioner that it is introduced the full length of the uterus. When the uterus is hypertrophied,—when enlarged with fibrous tumours, &c., &c ,—the cavity is elongated, and the degree of its elongation can be easily measured by the bougie. There are two elevations upon it, at four inches and a half from the point, in order to enable the physician to take his measurements easily without withdrawing it. Elsewhere than at two and a half and four and a half inches from the point there are depressions or grooves at inch distances for the same purpose In cases in which the uterine cavity is diminished in length by inversion, &c., the bougie equally enables us to ascertain that point. The whole length of the stem is nine inches.

But the diagnosis may be made out still more completely and accurately by the further use of the bougie. For,—

1. Besides showing in the manner stated, the direction of the uterine cavity, and hence of the body and fundus of the uterus, by the direction in which the instrument itself passes,—

2. We can ascertain by a vaginal or anal examination of the supposed tumour, that the extremity of the uterine bougie is lodged in *its* centre, showing the swelling to be produced merely by the displaced fundus of the uterus; and,—

3. After this, by turning the bougie gently round so as to bring the concavity, or rough side of its handle, to look to the pubis, instead of looking, as at first, to the sacrum, we can replace the uterus and feel it upon the bougie if required, through the abdominal parietes in front. We can thus certify to our own minds that we have nothing on the point of the instrument except the fundus uteri. And again, if necessary, by introducing a finger into the rectum or vagina, and then retroverting or replacing the uterus at will, we can as it were make and unmake, as often as required, the apparent tumour lying between the uterus and rectum, and thus further prove this tumour to be nothing whatever but the retroverted fundus uteri.

[Retroversion requires to be diagnosed ; 1. from *pregnancy*, with which it has sometimes been confounded.]

2. *From Fibrous and other Tumours in the Posterior Wall, &c. of the Uterus.*—This is one of the most frequent errors of diagnosis which I have met with, and one into which, in former times, I myself frequently fell.

The attendant functional symptoms are in all respects the same; and on examination there is the same continuity of structure felt between the cervix uteri and the body lying between it and the rectum. In this way the retroversion of the uterus has very often been mistaken for a morbid growth upon the back part of the uterus, and even described as such. But the introduction and direction of the uterine bougie at once enables us to solve the difficulty. The bougie passes backwards into the very body and centre of the apparent tumour, at once showing it to be the retroverted fundus uteri. It may be proper, however, to add, that instances are by no means rare in practice of the presence of small fibrous tumours attached to the posterior wall of the uterus being conjoined with retroversion.

[From *carcinomatous tumour*, or from common *puerperal hypertrophy*, the diagnosis is made in the same manner.

3. *From Ovarian Tumours in their earlier Stages.*—When the ovary enlarges from multilocular degeneration, or other causes, it almost always first grows downwards into the space lying between the back wall of the uterus and the anterior part of the rectum, resting thus upon the roof of the vagina behind. In its enlargement it almost invariably pushes the uterus anteriorly, and *before* it; and this relative position of the uterus to ovarian tumours is often an important matter in the diagnosis of ovarian disease in its later and more advanced stages. At first the body of the enlarged ovary may be mistaken for the retroverted fundus uteri, more especially as the os uteri is generally displaced forwards. But the introduction of the bougie shows the uterus to be in its normal situation, and at the same time generally enables us to draw the uterus so far forwards as to make us certain that it is not attached to the existing tumour, and does not form one continuous structure with it. So far the evidence is merely negative. If further evidence of a positive kind, of the nature of the tumour is required, we may obtain it by the use of a fine exploring needle, a means of diagnosis of great value in this as in other complications.

4. *From Pelvic Cellulitis.*—Inflammation of the cellular tissue of the pelvis, limited or more diffuse, is certainly a frequent disease, both after delivery and in the unimpregnated state. I have seen it now at many different periods of life, from six years up to sixty. It is generally spoken of as a "pelvic abscess," but improperly so, for it does not always necessarily terminate in abscess, any more than pleurisy necessarily terminates in empyema. When the inflammatory effusion seems limited, as it sometimes is, to the space between the uterus and rectum, the firm tumour, or swelling formed by it, may be mistaken for retroversion. The direction of the bougie, when introduced into the uterus, will show us, however, that the uterus is *not* retroverted; and the accompanying symptoms, and, if necessary, the use of the exploring needle, will enable us to complete the diagnosis.

5. *From Extra-Uterine Conceptions lodged between the Uterus and Rectum.*—Nauche, in his *Maladies des Femmes*, (p. 108,) mentions a case in which an extra-uterine conception was mistaken for a retroverted uterus. I lately met with an instance where it was a matter at first of great doubt and difficulty, whether the tumour lying on the anterior wall of the rectum, and accompanied with sudden symptoms of rupture into the peritoneum, was an enlarged and retroverted uterus, or an extra-uterine conception. Examinations with the bougie at once showed the uterus to be both normal in its size and in its position.

6. *From Organic Disease in the Anterior Wall of the Rectum.*—In a case of Dr. Marnoch's, the tactile examination of a tumour lying between the uterus and rectum, gave me the idea that it was retroverted uterus. The employment of the bougie, however, showed the uterus to be normally placed. On more minutely examining

per anum, the anterior wall of the rectum was found much thickened and indurated; the patient died some months subsequently of carcinomatous stricture and disease of the rectum.

[As to *Treatment.*—If the displacement is *recent*, it is sometimes sufficient merely to replace the organ, if at the same time we take care that the patient lies for a length of time on the side or face, prevent accumulation in the bladder or rectum, reduce local inflammation, and restore the tone of the parts by astringent injections, &c. But we generally meet with the retroversion in a chronic state, and here there are three distinct indications of treatment. 1. *The removal of any coexisting morbid state of the uterus*, as congestion, hypertrophy, or chronic inflammation: these, however, are generally the effects of the retroversion, and will be relieved by the fulfilment of the 2nd *indication*, which is *the restoration of the uterus to its normal situation.* This is accomplished by the uterine bougie, when we make the diagnosis, as has been above described. 3rd. *The retention of the replaced uterus in situ.* Of this Dr. Simpson says,]

After detecting the ease and certainty with which the uterine bougie could be used for the discovery of retroversion, and for the temporary restitution of the organ, it appeared to me that the most direct and perfect method of retaining the replaced uterus *in situ* would consist in some means of retaining and fixing, as it were, the end of the bougie for a time in the uterine cavity. I soon found that the restoration of the uterus temporarily, from day to day, with the bougie, was insufficient, and that some more permanent means of keeping the organ replaced and retained were necessary. But one primary and important point required to be solved:—Would the uterus bear with impunity the presence of such a body for a length of time in its own cavity? My first experiment on the subject I made with extreme anxiety, and great misgivings as to the results. I watched the case from hour to hour, and from day to day, and was delighted to find that the presence of the instrument was borne by the uterus without irritation or annoyance. The patient was almost entirely incapacitated from walking, by retroversion of the uterus, before it was used. After thus wearing for some months a wire pessary in the cavity of the uterus, she so far recovered as to bear two children, one in this country, and subsequently another in India. I soon found, in other cases, that, when the instrument was once properly fitted and adjusted, it could be borne with perfect safety, and without any pain or inconvenience. Occasionally I have since met with cases in which the uterine pessary has created so much irritation as to render its withdrawal necessary in a few days after it was introduced. But these cases have been exceptions, and by no means common or frequent exceptions, to the general rule; and I have allowed the instrument to remain in the uterus for two, four, six months, or longer. Within the last few weeks I have removed two uterine pessaries, one of which I had introduced eight, and the other nearly ten months previously. They are not to be interfered with at the menstrual periods. Sometimes, though by no means always, a slight menorrhagia follows their use, particularly for the first period or two after their introduction.*

[Dr. Simpson here gives us several engravings representing the different instruments which he has used, and which he at present generally uses to keep the retroverted womb in its proper position. We are sorry that we have not had time to prepare these engravings. The reader will find them in the Dublin Quarterly Journal, from which we take our extracts; and we advise him to go to that Journal for further information. The instrument chiefly used consists of a stem $2\frac{1}{3}$ inches long, which is introduced into the uterine cavity, being prevented from going further by its insertion into a flattened ovoid bulb or ball,—the os uteri thus rests upon this bulb when the stem is within the cavity. From the under surface of the bulb, and nearly at right angles with it, but inclining downwards and forwards in the direction of the vagina, is inserted another stem; a vaginal hollow portion or curvilinear tube, something like a female catheter, into which, like a trocar into a canula, can be pushed an additional portion, to be fixed externally to the pubes. Dr. Simpson adds,—]

It is, perhaps, almost unnecessary to add that, if the instrument is found to press disagreeably on any part, it may be easily bent without removing it, so as to take off that pressure; and it may thus require to be modelled and adjusted again and again in various parts, in order that it may be ultimately worn without annoyance and inconvenience.

When required to be withdrawn, the pubic portion is first bent back, so as to be clear of the pubis; then the vaginal pieces are unlocked; and, lastly, the internal part is extracted.

The time during which it requires to be worn, in order to effect a cure, varies in different cases from one or two weeks to many months. The recent or chronic character of the case, and particularly the degree of tendency to the recurrence of the retroversion are our principal guides on this head.

The employment of these uterine pessaries will cure many, but by no means all cases of retroversion of the unimpregnated uterus. And even when not sufficient to cure, they will generally relieve the patient, and palliate her annoyances and sufferings.

If the retroversion were causing no unpleasant symptoms, nor interfering with the functions of the uterus, I have always recommended the avoidance instead of the adoption of local measures and remedies, either mechanical or others. When the reverse was the case, I have employed the means I have mentioned, with the effect of curing many and of relieving others. In the few exceptional cases in which no pessary could be borne, in consequence of the irritable state of the uterus, or where they failed to produce a cure, I have contented myself with reducing this morbid state of the parts by leeching, external counter-irritation, the application of belladonna ointment pessaries, &c., and rest, in the first instance, followed afterwards by the employment of local and general tonic measures. The patient often derives much relief from wearing an abdominal bandage (as those of Hamilton and Hull,) with a supporting perinæal pad.

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* Mr. Young, our cutler in Edinburgh, makes them of German silver; sometimes he has electrotyped them for me, but this addition is unnecessary.

[We think that a most important omission on the part of Dr. Simpson in this valuable paper is the description of the best position in which to place the female before the introduction of the uterine sound and the wire pessaries which he describes. It may be very easy for Dr. Simpson, with his experience, to introduce his sound, however deflected the uterus, and in whatever position the woman may be; but we maintain that it will often be very difficult, even by the most experienced, to introduce the sound or the wire pessary in the usual obstetric position. The instrument is generally held in the right hand, and the forefinger of the left hand is placed at the os uteri to direct the point of the sound: this may be easy enough in cases of anteversion, or in the natural position of the womb; but it is just the worst position to place the patient, and the worst way in our opinion to hold the instrument and to place the finger in cases of retroversion. Even holding the sound in the left hand, and feeling for the os uteri with the forefinger of the right hand, is a better plan than the first, when the practitioner is a little more practised in the manipulation.

But we beg to recommend a still better plan, which will be found to render the introduction of both sound and wire pessary a comparatively easy operation. It is, in a case of retroversion, to place the female on her knees and elbows with her face on a pillow; the introduction of the sound, &c., will then be found to be as easy as, and very like that of the catheter in the male: the os uteri is pointing downwards and forwards, the forefinger of the left hand is very easily placed upon it. the point of the sound is then as easily passed into the cervix, and by gently depressing the handle, as with the male catheter, the sound passes upwards and backwards to the fundus uteri. Moreover, the patient is now in a much better position for the fundus to be replaced forwards. It is the natural position for such an operation. In like manner for anteversion, we suspect that the best position would be on the back; but of this we have had no experience. In corroboration of our views respecting retroversion, however, we have had lately several cases. We must also warn our friends against *riding a hobby* of this kind too hard. We ought not to forget that in common *prolapsion* of the womb, when the os is pointing downwards and forwards, the fundus must necessarily point upwards and backwards, thus exactly *reversing* the natural position of these parts. What will be the consequence of this malposition?—that, if the organ be at all enlarged, which it often is for months after labour, by passing the finger between the cervix and rectum, we shall find the back of the womb, and even the back of the fundus itself, pressing more or less on the rectum, and unless we were aware of this circumstance we might easily set it down as a case of retroversion, whereas it may be nothing more nor less than a simple prolapsion, or slight falling down of the womb into the inferior axis of the pelvis. This mistake might be confirmed when it was discovered that in such a case of prolapsion both the uterine sound and the wire pessary were just as useful in changing the direction of the fundus uteri and placing it upwards and forwards, as if it had originally been a real case of retroversion.]

Dublin Quarterly Journal, May 1848, *p*. 371.

[DR. PROTHEROE SMITH also gives us some excellent remarks on flexions of the uterus. After remarking upon the supposed rarity of these affections, Dr. Smith observes,—]

Torsions of the uterus are very common; and I confidently assert that numerous instances of what have been pronounced to be incurable tumours, are cases of retroflexion, and perfectly (even easily) curable. The use of the uterine sound, or bougie, has placed this beyond contradiction or doubt; and I believe the question of curvatures of the uterus, will, ere long, suggest itself to most obstetric practitioners in the diagnosis of obscure uterine symptoms, though hitherto but few authors have directed the attention of the profession to this subject. Professor Simpson's laborious enquiries and investigations have opened a path to modern discoveries and improvements in the mode of examination and treatment of the maladies of the uterus, and to him we are indebted for showing the frequency of the disease of which I am about to treat.

During a visit to Edinburgh, in the autumn of 1844, he called my attention to the fact that these affections are of common occurrence; since that, experience has proved to me the correctness of his opinion. With the knowledge I had thus gained, I soon discovered, on my return to London, the value of Dr. Simpson's observations, and abundant opportunities of pursuing my researches have been afforded to me at the hospital for women. Many cases, which had previously baffled every attempt to ascertain their real nature, were now readily shewn, by means of the uterine sound, to be flexion and displacement, and were cured as easily as discovered. The records of my hospital, as well as of my private practice, shew a large number of patients, who, for years had laboured under these distressing maladies, restored to health and usefulness, and in not a few the cure has removed the only cause of sterility.

The flexions of the uterus are either forwards, backwards, or to one side. In the first (antiflexion), the os and cervix remain in their normal position, whilst the body and fundus are bent forwards and descend more or less behind the symphysis pubis and bladder. In the second (retroflexion), the os and cervix still remaining stationary, the body and fundus are bent backwards towards the concavity of the sacrum, and this is far more common than antiflexion. In the third (lateral curvature), the cervix is inclined to one side, generally the left, and the displaced fundus occupies the sacro-iliac cavity, or that part of the foramen ovale of the corresponding side, thus forming a double flexion. In addition to these curvatures, instances occur in which the os and cervix are bent upwards, backwards, and to one side, (chiefly the left), whilst the fundus and body retain their natural position and direction. In the virgin state, I have very frequently noticed a peculiar malposition, in which the os looks directly forwards, and the cervix and body lie parallel to the perinæum, the fundus abruptly bent forwards upon the anterior (now upper) surface of the cervical portion, and comes into contact with the examining finger immediately in front of and above the os. In this instance the uterine sound will readily pass backwards to the extent of an inch and a half, and then by directing its front abruptly forwards, will be found to pass another inch into the cavity of the fundus. Thus this peculiar distortion is clearly demonstrated, the organ restored to its position in health, and the cervix and anterior labium become evident, which on the first digital examination was not felt protruding, as is usual, into the vagina, but lying, as it were, above the superior wall of the canal. At a late interview with Dr. Ferguson, the talented ex-professor of midwifery, of King's College, he informed me that he had frequently observed this kind of displacement, and I am indebted to his kindness for introducing me to a lady, the subject of this affection, who is now under our care. With this exception, I am not aware that this, by no means rare condition, has been observed by any former writer.

Dr. Denman, who was the first British author to describe retroflexion of the uterus, as distinguished from retroversion, says, that he had seen only one case of the affection. The cause he considers to be retention of urine, existing at the time of delivery, and continuing unrelieved for some time afterwards. The torsion was easily removed after emptying the bladder by the catheter. Flexion and torsion of the uterus differ in nature, causes, and symptoms from both ante and retroversion. Flexion occurs much more frequently in the unimpregnated state. This observation has been confirmed by Professor Moreau, of Paris, who indeed was the first to *publish* it. And it is equally true, that retroflexion is not only a very common affection, but that it is much more common in the unimpregnated state than retroversion is in the impregnated; and this observation is confirmed, I believe, by the experience of Drs. Simpson and Rigby. There is no doubt that flexion of the uterus has been, until even very recent times, confounded with not only morbid growths or tumours, but also with obliquity in which the os and cervix are displaced from their normal situations, the axis of the organ remaining straight. The essential difference, therefore, between flexion and version are—1, that in the former, the os and cervix preserve their normal position; and 2, the axis of the uterus in flexion is curved—straight in the forms of obliquity.

This at least is the usual rule. The diagnosis of retroflexion from retroversion is difficult, especially in chronic cases, if we trust to the common modes of exploration.

[By means of Simpson's uterine sound, however, the diagnosis, as Dr. Smith remarks, is perfectly easy.]

Retroflexion may occur even before the age of puberty; it is, however, more common after menstruation is established; or it may come on, as in Dr. Denman's case, after labour. Under the latter circumstances, the cause may be irregular contraction of the uterus; partial softening; cicatrices of the mucous membrane, and tumours, adhesions of the uterus to surrounding parts, &c.; but I believe by far the most common cause—indeed, I consider it the usual cause—is interstitial deposit and subsequent organization in the uterine walls.

The usual symptoms of retroflexion of the uterus are shooting, dragging pains in the uterus, rectum, loins, groins, hips, and down the thighs, more or less dysmenorrhœa and menorrhagia, or amenorrhœa, leucorrhœa, hæmorrhoids, and irritation about the rectum, tenesmus and difficulty or distress in menstruation, constipation attended by a sensation, as though the bowels were prevented from acting by a heavy body pressing and obstructing the rectum, followed by anorexia, dyspepsia, and a train of deranged functions of all the organs of the body; and when the disease has continued a long time, not only does the countenance in a peculiar manner betray the existence of an important malady, but the mental powers become influenced and even impaired; the intellect and temper often show the pernicious influence of this disease, and marked relief in this respect is not only frequently produced for the sufferer by proper treatment, but is equally obvious to her friends. In these introductory observations, I shall content myself with general considerations, and in future contributions shall hope to enter more into detail.

The irritation about the rectum is much more marked in retroflexion, whilst the bladder is more involved in anteflexion. This is what might have been expected à priori. Sterility or frequent abortion are apt to supervene on retroflexion in the married female. Dr. Simpson, in his papers entitled "Contributions to the Pathology and Treatment of Diseases of the Uterus," has asserted that in uterine diseases the common or general symptoms (those just enumerated) will only enable us to "localize the *seat* of the affection, but are insufficient to specialize its exact nature." In this opinion I fully coincide. It is especially true in reference to retroflexion. Any or even all of the symptoms may be absent; and if all are present, they are totally insufficient to enable us to say more than that *something* is the matter with the uterus. We often find that the general symptoms do not bear any fixed or uniform ratio to the extent or duration of the disease. Perhaps the most constant symptoms of uterine flexion are pain and dragging, dysmenorrhœa, menorrhagia, leucorrhœa, and rectal or vesical irritation, followed by bad health. I shall not insist upon these symptoms, as, our suspicions being aroused by them, we are enabled to diagnose the affection with *perfect* certainty. The means of diagnosis are—1, tactile examination per vaginam, per rectum, and through the abdominal walls in the hypogastric region; of these three modes that per vaginam gives us by far the most valuable information: 2, the use of the speculum: 3, Dr. Simpson's uterine sound. As I have already said, it is to the invention of this last named instrument that the profession is indebted for almost all the knowledge we possess of retroflexion, but above all to the facility and certainty of its diagnosis.

I will concisely describe the mode of conducting the three forms of exploration which I have enumerated. 1. The examination per vaginam may be performed, the patient being in both the vertical and recumbent posture. As a general rule the position occupied by women in this country during parturition, namely, on the left side, with the legs flexed on the abdomen, will be found by the British practitioner to be the best for examining by touch per vaginam. Obstetricians are better accustomed to the disposition of the parts in this position, and the deviations from the usual condition of the organs are thus more easily recognised, whilst the feelings of our patients are not outraged, as I have known them to be when the plan which is followed by our continental brethren (lying on the back) is proposed or insisted on. Previously to the examination, we should empty both the bladder and rectum, as otherwise we may mistake the retroflected fundus uteri for a mass of hardened fæces, or vice versâ. Upon passing up the finger we feel the os and cervix in their normal position, and immediately behind them a hard globular substance. This is the fundus. In most cases we may trace the continuousness of the fundus with the cervix, as the finger may pass over the knuckle or angle formed by the flexure. This is more easily accomplished when the fundus lies very low down, below the os. It is remarkable that when recent, the extent of the retroflexion will vary from time to time in the same case, so that the connexion of the tumour with the cervix may be easily ascertained at one visit, and with great difficulty at another. Though the os and cervix do not suffer any displacement, the latter may be, and frequently is, hypertrophied, or presents to the touch certain knots or nodules, varying in size and number, which often wholly disappear, and are generally rendered less distinct by the introduction of the uterine sound and restoration of the cervix to the normal position. In some cases the utero-vesical layer of the peritoneum is so tense as to bring the fundus of the bladder low down in the vagina, or even to induce partial hernia of the bladder; whilst in others this displacement is attended by a hardened and thickened feeling of the anterior wall of the vagina, which disappears after the restoration of the displaced fundus. Occasionally also the urethra is drawn up, feeling like a tense cord gradually lost in the contiguous vagina, whilst its orifice is retracted within the arch of the pubis. The examination, per rectum, is a valuable aid to that per vaginam, as from being able to pass the finger much higher up (from the obvious reason that its progress is not obstructed by the presence of any body closing the canal) we may frequently feel the solid globular body of the fundus. In addition to this advantage we can, of course, ascertain with certainty the absence or presence of scybalæ, and thus correct or verify our first impression. The examination through the abdominal walls is of little value except in cases of anteflexion, and then only in patients of lax fibre and spare habit, and when the uterus is hypertrophied or enlarged. 2. By the speculum we may obtain at least the negative evidence that the symptoms are not produced by any of the numerous affections of the os or cervix.

British Record, Jan, 1st, 1848, *p.* 35.—*Feb.* 1*st. p* 56.

[Dr. Beattie, of Dublin published a paper on the same subject in November last, in the Dublin Quarterly Journal. He says:]

In consequence of this affection of the uterus being almost always, both by foreign and British authors, described under the head of retroversion of the organ, it has escaped the notice of practitioners, and hence, as Dr. Ashwell says, "Many question whether the uterus is ever antiverted, antiflexed, or retroflexed."—In retroversion of the uterus, the long axis of the organ becomes nearly parallel to the plane of the brim; the womb, as it were, rotates upon its horizontal axis; hence the fundus uteri sinks backward into the cavity of the sacrum, and the os and cervix rise to the symphysis pubis. In retroflexion of the womb, no such movement occurs, but a bend takes place in the uterus at the point where the neck and the body of the organ join, aud the fundus uteri sinks down between the cervix uteri and the rectum; the womb is in short doubled upon itself, the cervix uteri remaining in its natural position, but on a somewhat higher level than the fundus. This position of the uterus constitutes retroflexion of the organ; by some of the French writers it is termed incurvation of the uterus, and by Meissner, Busch, and others, the retort-shaped or horseshoe-shaped curvature of the womb. This is the affection to which Professor Beattie directs attention in the short notice before us. "The angle at which the bend takes place is sometimes very acute. at others more obtuse. The displacement is commonly the result of pregnancy; it could scarcely if at all occur during gestation, owing to the fulness and tension of the uterus in that state; but in all instances that have come within my knowledge, or that I find recorded, the occurrence of the accident was subsequent to delivery. Velpeau saw fifteen cases in which it occurred in the unimpregnated uterus, but after parturition. Retroflexion is peculiar to the unimpregnated uterus, subsequent to delivery. Retroversion takes place when the uterus is distended by pregnancy. The latter may compromise the safety of the patient; but the former is productive only of distressing local symptoms, unaccompanied by danger. The time at which retroflexion takes place, is most probably immediately after delivery, when the uterus is still large, but soft and pliable; it is, however, very likely to be overlooked at this period, because the urgent symptoms do not manifest themselves until the patient rises from bed. She then probably for a considerable time endures these distressing sensations, under the delusive hope that they will gradually disappear as she regains strength. The organ by this delay becomes fixed in its unnatural position, a certain amount of chronic inflammation alters its tissue, and moulds it into a new shape, rendering all attempts at restoration by mechanical means alone fruitless. The curative measures to be adopted, are those we employ to restore a retroverted uterus, and, besides the mechanical means, the altered condition of the tissue and texture, as well as of the shape of the uterus, must be attended to. The chronic inflammation, which is the effect of the alteration in shape, and the cause of alteration in tissue, must be combatted by appropriate treatment before we can expect success in our attempts to restore the organ to its natural shape." Professor Beattie relates three cases in proof of what he has above advanced; these cases are so similar, that it is unnecessary to quote them individually. The three patients suffered all more or less from menstrual derangement, from leucorrhœa, and from a sensation of dragging weight and debility in the loins, groins, and back. The most characteristic symptom in the whole of them was pain and difficulty in defæcation; two of them described their sensations as of something blocking up, or arrested in the bowels, preventing the exit of the fæces. On vaginal examination, the uterus was found retroflexed, with the fundus pressing into the rectum. Dr. B. could pass his finger into the angle formed between the body and cervix; there was also congestion and ulceration of the os and cervix uteri; the ulceration was successfully treated with nitrate of silver, and the congestion with leeching. By a combination of these means, together with a prolonged employment of the recumbent position, the congestion of the uterus gradually disappeared, and in one case the organ becoming by degrees smaller, could be at length pushed into its natural position, still, however, with a tendency to fall back again; this was remedied by means of a sponge pessary, and the patient perfectly recovered. In the second case, the condition of the patient was very much improved, but the uterus could not be artificially restored to its natural position; nature at length, after a subsequent delivery, effected a cure, care being taken that she should not be permitted to rise from bed too soon after parturition. The third case underwent considerable improvement; but no cure was effected in consequence of the patient's refusal to submit to the necessary treatment.—*Dublin Journal of Med. Science, November*, 1847.

[We are of opinion that Dr. Beattie has quite under-stated the frequency, &c., of retroversion and retroflexion of the unimpregnated uterus. For the last two years our Edinburgh accoucheurs have become convinced that it is an exceedingly common displacement—easily detected by a means to which Dr. Beattie does not allude, viz., the uterine sound—and in its more marked forms requiring the use, for some time, of a wire pessary introduced into the cavity of the uterus.—*Editor Monthly Journal.*]

Monthly Journal, Dec. 1847, *p.* 447.

[On this subject Dr. HENSLEY says, the recent researches of Professor Simpson, and Drs. Rigby and Protheroe Smith have shown the disease to be of by no means unfrequent occurrence: the reason, therefore, of its being so long overlooked, is that the means of diagnosis were defective. It was to remedy this defect, that Dr. Simpson introduced his uterine sound, at which time, says Dr. Hensley, he]

Laid down the four following propositions, the truth of which is so obvious, that I deem it unnecessary to enter into further proofs respecting them.

"1. The general and local functional symptoms of disease of the uterus are such as to enable us to localize, without enabling us to specialize, the exact existing affection of the organ.

"2. In almost all instances of diseases of the uterus, it is only by the physical examination of the organ itself, that we can distinguish the precise nature of the existing affection, and fix its character, extent, &c.

"3. The physical examination as formerly practised, seldom enables us to ascertain accurately the organic condition of more than the cervix and lower part of the body of the uterus.

"4. It is impossible by the use of a rod or bougie, introduced into the uterine cavity, to ascertain the exact position and direction of the body and fundus of the organ, to bring these higher parts of the uterus in most instances within the reach of tactile examination, and to ascertain various important circumstances regarding the os, cavity, lining membrane, and wall of the uterus."

The bougie proposed by Professor Simpson, and called by him the *Uterine Sound*, is an instrument provided with a flat handle, having one surface roughened,—that corresponding to the concavity of the instrument. Its shaft is about nine inches long, and terminated by a roundish bulb, about one-eighth of an inch in diameter; the shaft is composed of flexible metal, to enable us to alter its curvatures; it gradually tapers in its thickest part; it is about one-fifth of an inch in diameter, corresponding in size to No. 8 silver catheter; in its thinnest about one tenth of an inch, in size, corresponding to No. 3 catheter. This instrument is graduated and marked at two and a half inches from the bulb, by a projection on the convex surface of the curve, to enable the finger to judge of its having passed to its full extent. The natural length of the cavity of the uterus is two and a half inches, and it forms a slight curvature forwards and upwards. The sound is passed with greater ease than the catheter, and produces less uneasiness than that instrument, certainly much less than the passage of a catheter in the male subject. The mode of passing it is as follows:—The patient is placed on the left side, with the knees drawn up; the forefinger of the left hand is then introduced to find the os uteri; having done so, the sound is passed, held lightly between the finger and thumb of the right hand, along the forefinger, and guided by it, is insinuated into the os, and gradually and gently pushed along the cervix into the cavity of the uterus; in some cases the canal of the cervix or the os internum is so small as not to allow it to pass; it must then be first dilated.

The application of the uterine sound has opened a new era in the history of uterine diseases; by its means, cases before imagined to be malignant affections of the os and cervix uteri have been proved to be nothing more than extreme congestion, produced by retroflexion of the fundus,—long standing affections pronounced by eminent men to be incurable; fibrous tumours have been demonstrated to be retroflexions, and removed by restoring the fundus to its natural situation; whilst other tumours, of whose connections it was difficult if not impossible to be certain, have been shewn to be ovarian and unconnected with the uterus. But time will not permit me to enter into the numerous applications and uses of the uterine sound.

We must now proceed to inquire what are the symptoms produced by this displacement, and the causes which lead to it?

In some cases no appreciable symptoms are produced, except perhaps a greater flow of the menses, and a greater tendency to abortion in the married female, whilst in others the symptoms are exceedingly distressing and complicated. It is in most cases difficult to trace the first origin of the affection, but in some instances in which diligent inquiry has succeeded in doing so, the patient would appear to have been cognizant of some depression or falling down of the body of the womb, sometimes occurring suddenly, in other instances more gradually progressing, in the former producing alarming sympathetic affections, as nausea and vomiting, and actual syncope, together with more or less pain referred to the groin or sacrum. The retroflexion increasing or becoming permanent, produces some pain or difficulty, or frequency in micturition, though it never leads mechanically to retention of urine. The patients complain likewise of a dull aching constant pain in the sacral region, probably arising from the pressure of the fundus on the sacral nerves, since it is often immediately removed on raising the fundus; the pain often shoots down one of the thighs, there is also a sense of weight and bearing down towards the rectum, much increased in the act of defœcation. Advice not being sought at this period, or the displacement being overlooked, other more serious symptoms manifest themselves; menstruation becomes highly painful, the discharge is generally increased in quantity, and clots and shreds denotingirritation are voided,—in short dysmenorrhœa is set up. In the intervals an abundant leucorrhœal discharge is usually present. These symptoms cannot exist without the patient's general health suffering more or less; the stomach, which has an intimate sympathy with the womb, becomes disordered, the appetite is capricious and irregular, the tongue loaded, and the bowels constipated, the patient's spirits are depressed and irritable, and a variety of nervous hysterical affections are apt to occur. Such symptoms as these though they do not prove the existence of a displacement of the womb, yet evidently localize the affection there, and warrant further examination per vaginam, which alone can enable us to determine with certainty the existence of this displacement, and to rectify it.

In examining a case of retroflexion of the uterus during life, the finger can frequently reach a firm globular mass, situated behind the cervix uteri, between the rectum and vagina; this is the fundus uteri, which is bent downwards and backwards, the os uteri instead of being forcibly dragged upwards and forwards behind the symphysis pubis as in retroversion, is little, if at all, removed from its natural situation. At first we may not be able to determine this globular mass to be connected with the uterus at all; it may appear to be merely a scybalous collection in the rectum, hence we should always if possible, before examining a patient, prescribe an aperient or an enema to remove this source of error. In other cases the tumour may be too high up to allow the finger to trace its continuity with the cervix, whilst in others again, the point of the curvature being low down, the fundus is much below the os uteri, and its continuity is easily traced by the experienced finger.

The exact position of the retroflexion varies considerably in different individuals, and even in the same individual, at different times; the point of curvature may be so high up that a very small portion of the fundus is all that is bent down. On examination per rectum, we feel the same globular mass through the anterior wall of the intestine, and being able to reach much higher up in this direction than per vaginam, we can frequently verify or correct our first impression.

It is, however, by the use of the uterine sound, that we can obtain sure and valuable information of the displacement of the womb. In a case of retroflexion, on passing the instrument in the natural direction upwards and forwards, it becomes almost immediately arrested; but on turning its point in the contrary direction, backwards and downwards, it will pass readily along the cervix uteri, and then glide downwards and backwards to its full extent of two inches and a half. The point can now be felt distinctly in the centre of the tumour, through the posterior wall of the vagina, or the anterior of the rectum, thus proving it to be the fundus uteri in this unnatural position. Nor is this all, by turning the instrument gradually and gently round, so as to bring the point upwards and forwards, at the same time assisting the elevation of the fundus with the forefinger of the left hand, we shall find that the tumour disappears, it can no longer be felt, the fundus is restored to its natural situation, and retained there by the sound within it; the patient will often be immediately relieved from the constant pain and uneasiness from which she has previously suffered in the sacral region.

In some instances the mere restoration of the fundus to its position is sufficient; it remains there permanently, even after the withdrawal of the sound; in others for a short time only; but in many cases, especially in those of old standing, the disposition of the fundus to return to its unnatural position is so great, that it requires the handle of the sound to be held pretty firmly to prevent its turning round, and as soon as the sound is withdraw, the fundus again retroflects, and we can again trace the tumour as before.

The examination and passage of the sound produces in many instances little or no pain, until we elevate the fundus, when the instrument, pressing on the ovary, which we shall afterwards see is extremely apt to become congested and inflamed in consequence of the displacement, occasions severe pain, which, however, immediately ceases on our completing the restoration. In the examination per rectum, the pressure of the finger on the fundus above occasions no pain, but if we elevate it, the patient immediately complains, and by passing the finger beyond the depressed fundus, we can discover the exact seat of pain to be the posterior and upper part of the fundus, in the situation of the ovary, which we can often feel as an oval body. These last symptoms are dependent on the inflammation of the ovary, and cannot, therefore, be regarded as essential to retroflexion of the uterus, but as the consequence of a complication. It occurs, however, sufficiently often, to render it advisable in all cases of oophoritis of long standing, to examine carefully into the position of the uterus.

Provincial Medical and Surgical Journal, Jan. 12, 1848, *p.* 10.

[The predisposing causes of retroflexion are congenital formations of the uterus, increased capacity of the pelvis, relaxation of the ligaments, and frequent abortions. Exciting causes are, accumulations in the bowel, violent exertion, straining at stool, &c. As to symptoms Dr. Hensley observes,—]

In all cases where the fundus has remained displaced for some little time, congestion and engorgement, not only of itself, but of the cervix and os uteri, is produced, owing to the return of venous blood being retarded; this congestion is occasionally so great as to lead even experienced men into the belief that malignant disease of the os and cervix is present, or that the retroflected fundus is a fibrous tumour.

The cause being overlooked, and the congestion continuing, ulcerative inflammation of the cervix is apt to be set up, and a long train of severe symptoms ensues, such as pain and heat in micturition, bearing down, leucorrhœa, the discharge being yellow and thick, occasionally tinged with blood, and other symptoms too numerous to enter into. The relations of an organ whose sympathies extend through the whole female frame, insomuch that some writers have considered it the centre of female nervous sympathies, cannot be disturbed without generally producing many sympathetic affections, among which we may class nausea, vomiting, spasm, and the protean forms of hysteria.

[Oophoritis is a frequent complication of retroflexion; it is marked by pain, heat, and tenderness in the region of the affected ovary, and lameness of one leg, which is kept flexed on the abdomen; sometimes too the swelled ovary may be felt per rectum or per vaginam. In the treatment of retroflexion, we must unload the bowels by saline aperients, and then give alteratives and tonics; while we relieve the local engorgement by leeching the anus or os uteri, and the use of the hip bath. Then we must replace the fundus by the uterine sound, keep the patient in bed for some days, and let her use astringent injections. Dr. Hensley remarks further,—]

Should these means fail, we must employ the uterine supporter devised by Professor Simpson. It consist of a metallic or ivory pin, the length of the uterine cavity, (two inches and a half,) fixed in a disc or button, on which the os uteri rests, connected with and kept in position by a little frame. resting on the mons veneris, and which is properly fastened by tapes. Dr. Rigby improved this instrument by making the pin flat instead of round, and broader at the extremity, so as to adapt it to a larger surface, and by employing ivory instead of metal. Dr. Simpson has removed the objection of corrosion being produced by the secretions, by having the metal electro-gilded. The instrument should be adapted while the patient is in bed, and she should be kept quiet for some days, till the uterus becomes accustomed to its presence. I have known peritonitis induced by the neglect of this precaution, the patient having walked home some distance; where, however, the patient is cautious in her movements, and disposed to follow the directions of her medical attendant, the instrument may be worn for months without inconvenience, and excites less irritation or discharge than the ordinary pessaries. The instrument is generally required to be worn a month or six weeks to effect a cure; after wearing it a short time the patient is able to take moderate exercise.

Dr. Simpson has another instrument for the same purpose, it is a species of pessary, to which he has fixed a hinge, by means of a spring, like the blade of a knife.

Provincial Medical and Surgical Journal, Jan. 26, 1848, *p.* 34

146.—*Case of Retroversion of the Uterus During Pregnancy.*—By Dr. J. Seddon —[The patient was 38 years old, and six months advanced in her first pregnancy when labour pains came on, and after they had continued some time, and the liquor amnii had been discharged three days, Dr. Seddon was sent for. The os uteri could not be felt, while the uterine tumour filled the pelvis and almost bore on the perineum. Dr. Seddon says,—]

The case appearing to be one of retroversio uteri, and the patient in the sixth month of pregnancy, we decided to attempt the replacement of the uterus. For this purpose our patient was placed on her knees, at the lower end of the bed, her hands resting on the floor. I then introduced my hand into the vagina, behind the tumour, and made pressure against it, but could not succeed in moving it out of the pelvis. Pressure on the tumour through the rectum had no better effect.

As our patient had no urgent symptoms, and the pains were not violent, and as she passed her urine freely, we decided to wait till the pains became stronger and more frequent, and then, if occasion required it, to endeavour to introduce the hand into the uterus, and bring down the fœtus. An opiate was to be given occasionally, and the bowels kept regular by castor oil and injections.

On the 29th of January, the pains having become urgent, and a portion of the unbilical cord having passed through the os externum, there being no pulsation in the cord, it was decided at once to attempt the delivery. With some difficulty I introduced my hand up the vagina, behind the os pubis, and by perseverance succeeded in passing it through the os uteri, when one of the feet, which presented, was felt and brought down. and the delivery of the fœtus easily completed. After waiting some time, the hand was again introduced, and the placenta brought away. This operation, however, was not very easily effected, as the vagina and uterus formed an acute angle with each other, and the placenta attached to the fundus uteri, which still remained low in the pelvis, was reached with difficulty. A gentle attempt was now made to replace the uterus, but without success.

The first few days after delivery the patient had some pain and tension of the abdomen, which were eaily subdued, and she slowly recovered her accustomed health.

Seven weeks after the confinement an examination was made, and the uterus found still retroverted. An attempt was again made to put it in its proper position, which proved unsuccessful. I did not make use of the uterine sound at this time, because I was not acquainted with its invention and application to displacements of the uterus, though I had previously made use of the flexible metallic catheter to explore the uterus, in suspected disease of that organ. Whether the sound would have been successful in this case or not, remains a conjecture. I am, however, inclined to the opinion, that the displacement might have existed for a long time, and the organ become accommodated to its altered position, thus rendering its adjustment the more difficult. This case, perhaps, may possess some additional interest, inasmuch as it shows that the hand (a small one at least,) may be introduced with safety into the uterus at the sixth month of pregnancy, for the purpose of delivery.

Provincial Medical and Surgical Journal, April 19, 1848, *p.* 205.

147.—*New Instrument for Prolapsus Uteri.*—[Dr. James Reid, Physician to the General Lying-in-Hospital, has]

Contrived a new instrument, which he calls the "womb supporter." It is formed of two separate steel springs, very narrow at the ends by which they are joined together; the free extremities being each one inch and three quarters broad, convex externally and concave internally, so as to admit of cork being attached to it; and the whole being covered with elastic gum, it has no sharp edge. The two narrow ends of the springs are fastened together by an intervening piece of ivory or wood, so formed as to allow the broader extremities to separate from each other to the extent of two inches and a quarter at their outer surfaces. The two free ends are passed together when introduced into the vagina, and are then allowed to expand, and to become applied to either side of the cervix uteri. The instrument is then gently pushed up, until its narrow end is at the vulva, thus raising the womb with it at the same time. (A second form of the instrument has a contrivance by which the ends can be easily drawn together, and the introduction as well as the extraction of the instrument facilitated.) A button is fixed to the connecting piece of ivory, and to this button a loop of vulcanized india-rubber is attached, through which a T bandage, ribbon, silk handkerchief, or other guard, can be drawn, and attached to the stays before and behind, for the sake of security, although in some cases the author has found the instrument requires no aid of this description. This instrument does not exert much lateral pressure on the vagina, and does not produce pain. The patients find no difficulty in its introduction and removal, and it is effectual in relieving the symptoms caused by prolapsus.

Medical Gazette, May. 5, 1848, *p*, 774.

148.—*New Instrument for Prolapsus Uteri.*—By M. Dubois.—This is a little ivory funnel introduced into the vagina to receive the neck of the uterus; its lower end is received into a little metallic cup which is movable and attached to two flexible steel arms, one of which passes behind the anus, and the other in front of the vulva, and confined by a bandage that surrounds the pelvis. This pessary has the advantage of being moveable; it does not constrain the wearer, and as she is able to remove it at pleasure to cleanse it, the many causes of irritation are thus avoided. Some are unable to wear it comfortably; no doubt, however, this may be accounted for by a morbid sensibility of the organs of generation often observed.—*Journ. de Méd.*

Dublin Medical Press, Nov, 24, 1847, *p*. 324.

149.—CASE OF POLYPUS UTERI.

By Dr. T. R. Mitchell, Master of the South-Eastern Lying-in-Hospital, Dublin.

[The polypus was about the size of an orange: its lowest part touched the perineum, and it was found to be attached to the cervix uteri: the pedicle contained two pulsating vessels of considerable size. Dr. Mitchell says,—]

On the 28th October, assisted by my friend Professor Beatty, I proceeded to encircle the neck of the tumour with a ligature, for which purpose the speculum was first introduced, which much dilated the vagina, and simplified the operation. The double canula of Gooch was used, having the windlass attached, and the ligature was made of silk salmon line, well waxed, and armed at either end with a piece of thin wire, of about a foot in length. This method of attaching wires to the ends of the ligature suggested itself to me, in consequence of the trouble and difficulty I have experienced in passing the ends of the wire through the lower part of the canula. When the tubes were adjusted (which I am happy to say answered the purpose admirably), after some little difficulty I succeeded in passing the ligature round the neck of the tumour, and proceeded to tighten it with the windlass. Unfortunately, it snapped across, and I was compelled to knot it (not having another with me), and re-encircle the pedicle. Having accomplished this a second time, the instrument was attached, and the lady directed to be kept quiet. Nothing untoward occurred until the 30th, being forty-eight hours after the operation: and as she had complained of pain in the hypogastrium, the ligature was not tightened. On this morning, however, a small quantity of blood was observed to trickle from the vagina, and the ligature was tightened considerably, in the hope that the bleeding would be checked. This did not succeed in effecting the purpose, and the hemorrhage became more profuse towards evening. A concentrated solution of alum was now injected into the vagina, by means of a gum elastic bottle, and the bleeding was diminished. On the 30th, six p.m., the patient was very weak from loss of blood, the bleeding having profusely continued the whole of the night; she had not slept, and became much alarmed. The discharge from the vagina was of a blood-red colour, but rather fœtid; her pulse was small and weak, but very quick—110; she complained of giddiness, and pains in the head, and imagined something was floating before her eyes. Wine, ammonia, and camphor were freely given, and the ligature was tightened as much as it would bear. I then proceeded to plug the vagina with pieces of soft calico, and administered a full opiate. At ten, a.m., the system had rallied much, and the patient was more composed. The bleeding, however, still continued, trickling down the instrument, which, I perceived, acted as a means of conveyance for it through the centre of the plug. I consequently determined upon removing the pieces of calico, and substituting sponge; accordingly, I filled the vagina full of the latter substance, which I found completely to embrace the canula. At six, p.m., the patient was much better, a very slight oozing of blood only continuing—felt stronger,—pulse 100,—complained of pain in the region of the bladder, which was relieved by passing water. Ordered the wine and opium to be continued, with beef tea. On the 31st, at nine, a.m., the patient felt in good spirits, had slept well, and there was no bleeding of any consequence; her pulse was full and strong, being at 80. I tightened the ligature without removing the plugs, and continued the wine, with beef tea, &c. Nov. 1st.—the patient still improving; a fœtid fluid oozing from the vagina, I withdrew the plug, together with large coagulæ. I then syringed out the vagina with the alum solution, which was returned of a very florid colour. The plug was again introduced, and the ligature tightened. On the 2nd, the report was the same as before, with the exception of slight pain and tenderness, on pressure, in the hypogastrium; the abdomen was ordered to be stuped. As there had been no evacuation of the bowels since the day of operation, an enema was administered. The ligature was again tightened, and the plug withdrawn, and a fresh one introduced. On the morning of the 4th the canula came away, bringing with it the wasted polypus, which was so tightly embraced by the ligature, that it required to be cut before it could be separated. The withdrawal of the instrument was attended by no pain or hemorrhage, a slight oozing of reddish and fœtid serosity only occurring, which was replaced by pus on the three following days. The patient was ordered quinine, wine, and every kind of nutriment, and on the 7th was removed to the sofa in her drawing room. She has since rapidly recovered, and is now quite well.

[Dr. Mitchell remarks, that of the three modes of extirpating polypi, torsion is only applicable to small soft vesicular tumours; excision he has never used, always preferring the ligature. Of this he says,—]

In using the ligature, I think the plan of fixing the wires to its ends most valuable, and need not impress upon practitioners the necessity for applying the noose as close to the bulbous part of the tumour as possible, lest a portion of the uterus be encircled by it. This point is well urged by Gooch, who also says, that the part of the pedicle attached to the uterus afterwards falls off, in the same manner that the funis separates from the umbilicus of the child after birth. If the ligature be properly applied, in the great majority of cases no pain will be felt; but it is thought that in *every* case where pain is felt, that a part of the uterus must necessarily be strangled, and that the ligature ought to be loosened, or if necessary removed. As to the latter practice of loosening the ligature, no one could question its utility; but I am quite convinced, that you may have considerable pain felt, although no portion of the uterus is touched; 'tis true, that the polypus contains no nerves, and therefore is insensible, but every one is aware, that as soon as the ligature is tightened, that the tumor becomes congested and swollen, owing to the free exit of the fluids being checked by the ligature; the blood coming to the tumor is also arrested; both which causes, acting upon so sensitive an organ as the uterus, may give rise to pain in the hypogastrium. Numerous cases are on record where the patient has died from peritonitis, almost immediately after the ligature has been applied; but in those cases I have no doubt that the uterus was injured. The practitioner, however, ought to be on his guard, and if he find that the pain continues after the application of a warm stupe to the abdomen, and using the catheter if necessary, he ought at once to loosen the ligature; and when tightening the cord, he should recollect that this may be necessary; and be careful not to pass *both* ends over the projecting screws attached to Laundy's windlass, but merely to fasten one to the eye at the extremity of the instrument, and tighten with the other: he can then easily slacken it as much as he wishes, a thing very difficult to accomplish when both are tightened.

There is one important symptom attendant upon this case which it is necessary to allude to, viz., the vast amount of blood lost, in which it forms a remarkable exception to the general rule, not only as to the quantity, but also the source; it is the opinion of some of the best authorities, that the uterine surface is the source from which the blood flows, when that disease is present. In this opinion I cannot coincide, as I am convinced that the blood (in this case) came from the vessels of the pedicle, as it was partially arrested at each time that the silk was tightened. The plugging proved most efficacious in stopping the hemorrhage; and I had determined, in the event of its failing, to twist off the tumour, with the canula attached, and apply caustic to the surface, or if necessary the actual cautery.

British Record, Jan 1, 1848, *p.* 30*; and Feb.* 1, *p.* 63.

150.—*On Polypus Uteri.*—By Dr. Locock, First Physician-Accoucheur to the Queen.—[Cases sometimes occur in which a very small polypus, not larger perhaps than a pea, gives rise to severe hemorrhage. In such a case, which occurred to Dr. Locock,]

By examination, the tip of a very small polypus was discovered considerably within the cervix. From its situation and small size, it appeared impossible to remove it. Some weeks afterwards, the author was called to see the lady some distance from London, in consequence of the hemorrhage having been alarmingly profuse. He found her with a bloodless countenance, and a most feeble, flickering pulse; and it seemed evident that if the hemorrhage continued she could not much longer survive. The polypus was still so far out of reach, that all attempts to catch hold of it by forceps or hooks entirely failed; but the author succeeded in picking off or digging through the polypus with his finger nail, and the patient perfectly recovered. He has since met with four cases of a similar character. In all, the peculiarity existed, that the small polypus could not be detected, except during the attacks of hemorrhage, at which times the os uteri was found open and flaccid. It was with exceeding difficulty and after many failures, that the author succeeded in removing the polypus in three of these cases. But he often felt that if he had a finger nail long enough, strong enough, and sharp enough, he might scoop away the polypus, as in the case of a medical friend's wife. He therefore had an instrument made, which is simply a very small, fine, and sharp scoop, like a carpenter's gouge, enclosed in a canula, either to remain entirely within or made to protrude beyond the sheath, the length of the protrusion being regulated by a screw at the handle. This instrument is passed through the os uteri, its cutting edge is pressed against the base of the polypus, and it is then worked gently half round and back again once or twice, till it has cut through the object. The author then offers some remarks on polypi of larger size, recommending their removal by excision rather than by ligature. Before excision, he twists the polypus round several times, so as to produce torsion of the arteries. In very large polypi, it may, perhaps, be better to apply the ligature first, and after two or three days, when the circulation has become well strangulated, to cut through the neck of the polypus above the noose. When the polypus, though quite within reach of the touch, is too small to be noosed by a ligature, and baffles the operator in attempting to seize it with forceps or hooks, the difficulty vanishes if a bivalve speculum be used to bring the polypus within sight. It can then be snipped off with a pair of curved scissors, with or without the assistance of the forceps, the cut surface being afterwards touched with nitrate of silver. Lastly, the author noticed the circumstance that a large polypus may exist, even of the size of a fœtal head, without the usual symptoms, hemorrhage or leucorrhœa, being noticed—its presence being discovered through its pressure on the bladder leading to the necessity of the catheter.

Dr. Locock said that the instrument was directed into the os uteri, and passed into the cavity of the organ. In its passage it cut through the base of the polypus, and removed it. He did not apprehend any ill consequences from wounding the uterus, for there was no organ of the body which could be wounded with more impunity than the womb in its healthy state.

Medical Gazette, May 5, 1848, *p.* 773.

151.—*New Mode of Applying Ligatures to Polypi.*—By M. FAVROT. —The recommendation of this method is its great simplicity. M. Favrot takes two gum elastic catheters, of convenient size, and cuts off the end of each just below the eye; he then doubles a piece of silk, of necessary length, and inserts the loop into one catheter, the two ends joined or not, into the other, and brings each extremity out of the lower end of the catheter. This being arranged, the next step is to separate the two threads between the upper extremities of the catheters, and to pull one down in the form of a loop, leaving only one above, which is carried up to the pedicle of the tumour. The application then is as follows:—

The catheters or sounds, together with the interposed thread, are carried up to the base of the tumour, the loop of the thread which has been pulled down being held on each side with the respective catheters. This being done, the said loop is allowed to pass over the tumour, the two catheters being transferred to the same hand; all that is required is then to tighten the thread by drawing its two ends, when as is readily seen, the loop glides out of the other sound, and encircles the pedicle of the tumour.—*Revue Médico-Chirurgicale*, Janv. 1848.

Provincial Medical and Surgical Journal, April 19, 1848, *p.* 220.

152.—*Removal of a large Fibrous Tumour from the Uterus.*—By Dr. SIMPSON.—[The patient, who was 46 years of age and had borne ten children, had been subject for two years to very severe floodings, recurring every fortnight. We are told that]

Dr. Simpson found, on examination, a large fibrous tumour imbedded in the back wall of the uterus, and which protruded downwards upon the top of the vagina in a rounded form, the os uteri and uterine cavity lying in front of it—as ascertained by the uterine sound.

Dr. Simpson, (accompanied by Drs. Malcolm, Zeigler, Weir, and Keith,) made an opening, by means of caustic potass, into the most prominent part of the tumour, about one inch behind the os uteri. It extended through the layer of uterine substance, and into the mass of the tumour itself On passing up the finger into the hole thus made, it was found that it could be passed easily between the substance of the tumour and the uterine wall. The tumour, in fact, seemed to be very loosely connected with its uterine envelope, and could be separated from it with great ease as far as the finger could pass between them. Two days after the caustic was used, Dr. Simpson found the artifical opening enlarging like the os uteri in labour, and the tumour beginning to protrude through it. It opened up gradually, the patient taking some ergot, and on the fifth day a large piece of tumour was found pushed low down into the vagina, while the edge of uterine wall could barely be felt, encircling it like the rim of the os uteri when fully dilated. The abdominal tumour had subsided considerably. On the eighth day, Dr. Simpson attempted to pass a ligature round the mass, but found it could not possibly be made to include but a very small portion. He separated, however, and brought away a small fragment, not without giving a good deal of pain. The tumour now gradually and more completely filled the vagina. The uterus, however, seemed unable to throw it off entirely, and the patient was getting exhausted from the quantity of the discharge, which was very fetid and offensive. On the 12th day, Dr. Simpson, while she was completely under the influence of chloroform, passed up his hand by the side of the tumour, completed the separation of the remaining adhesion (like an adherent placenta), and brought away the tumour in one mass. This was done in a very few minutes. The patient awoke up quite quietly, said she had felt no pain whatever; nor did she complain at all of pain in the region of the uterus subsequently. She proceeded very well for three days, her pulse not above eighty; when, in consequence of her nurse taking unwarrantable liberties with her in making her get out of bed, washing, &c, she was seized with rigors, followed by severe sore throat and irritative fever. This completely exhausted her remaining strength and she died six days after the tumour was removed. The body was examined by Dr. Bennett, Dr. Scott, Dr. Simpson, and Dr. Keith. The peritoneal surface of the uterus was perfectly healthy, and showed no trace whatever of inflammatory action. The cavity in the back wall, in which the tumour had been embedded, was much reduced in size, and appeared to be tending to a healthy cicatrization.

The tumour weighed three pounds eight ounces when removed. It must have been somewhat heavier, as the great discharge for several days was no doubt from partial softening and decomposition of the tumour. Various French surgeons had cut down upon such tumours, and enucleated them by instruments, or by the hand. In the above case, Dr. S. had merely formed an artificial opening into the uterine cyst (as it were) containing the tumour, and then allowed the uterine walls, which are hypertrophied around such masses (exactly like the uterus in pregnancy), to push down and expel the foreign body. It was, he believed, the first time this new operation had been performed, and the largest fibrous tumour ever yet enucleated. The tumour, on division, was shown to be the common fibrous tumour of the uterus.

Monthly Journal, March 1848 *p.* 695.

153.—*On Certain Forms of Headache in Females.*—By Dr. P. Murphy.—[There is a form of headache frequently met with in females, during the menstrual periods, and attacking mostly the left side of the head:—]

The pain, says Dr. Murphy, is intermittent, shooting, and lancinating; may be fixed for days, and is most severe at the temple (when it is termed clavus hystericus,) and next at the parietal protuberance and occiput: it proceeds from the sub-occipital nerve, and, if the exit of the nerve is pressed upon, pain more or less severe is complained of, extending along the whole course or at certain sites only of the nerve—as at the temple, nape of neck, parietal protuberance, &c.: it is usually increased during the menstrual period, and is generally a complaint of unmarried females between the 23d and 35th years of life, and is indubitably a form of hysteria. The menses are usually profuse or difficult, the bladder irritable, and there are ill-defined painful sensations about the pelvis; other forms of neuralgia often co-exist. The irritation of the sub-occipital nerve must be traced to the ovaries, being only present where these exist, and while capable of fulfilling the function of menstruation; and our treatment must be primarily directed to remove any congestion or irritation of these peculiar organs, and secondarily to lessen the pain of the nerves. The author advises the daily use of hip-baths or sea-bathing, where possible; attention to prevent accumulations in the rectum; abstinence from stimulants; mental employment; inf. valerian c. digitalis, with pills of assafœtida; occasionally general or only local bleeding; and when these fail, a gentle mercurial action, the cold bath being during the time omitted. As local means he recommends belladonna plasters, veratrine ointment, sinapisms, or blistering. Where, however, the patient is exhausted by leucorrhœa or profuse menstruation, with symptoms of chronic inflammation of the womb or ovaries, the treatment becomes more doubtful; but the author prefers the trial of a tonic treatment, and advises the exhibition of the valerianate of zinc and quinine, as especially efficacious, and the sulphate of iron in infusion of valerian when there are evidences of confirmed chlorosis. This headache may be termed the *nervous* headache: it also assumes another form, which may be termed the *cutaneous* headache, and is the hemicrania of our forefathers: it seems to be located in the integuments of one half—usually the left side—of the head, which is so exquisitely sensible as scarcely to bear the least touch of the finger, and the pain never passes the mesial line.

Another form of headache is that arising from deficiency of blood within the cranium, and coming on after hemorrhages, exhausting discharges, or any other debilitating causes; the best examples occur in chlorosis. It is increased by the erect, diminished by the recumbent posture: is not a very painful form, but is often attended with impaired vision: its cause may be traced to diminished muscular power of the heart, which palpitates on slight exertion: there is also dyspnœa, pale face, and other symptoms of a feeble circulation, with a sinking pain at the epigastrium, and craving appetite. If the true cause of this headache is mistaken, and depletion used, paralysis has been known to supervene, but if the debility be removed, the muscular power of the heart is easily increased; and the most useful remedies are, steel by itself or combined with quina, full diet, and the recumbent posture.

Another form of headache alluded to by the author arises from excess of blood, and may exist as a passive or congestive, or as an active or inflammatory state. The former, arising from the various known causes of congestion, is diagnosed by the constant heavy pain at the anterior part of the head, increased by the recumbent posture, sense of chilliness, slow feeble pulse, tendency to vomiting, and pain in the lumbar region, caused by congestion of the spinal cord. It is a dangerous form of headache, and has in the depressing diseases proved in a few hours fatal, but in other cases has lasted weeks without much mischief. The treatment should be to induce reaction as soon as possible by the warm-bath or an emetic. The author deprecated the usual attempts to arrest vomiting during the invasion of fevers. If the headache persists, with hot skin, leeches to the inner nares will be found of value, applied to the temple, they debilitate without relieving this pain of the head, and they are altogether inadmissible when this coexists with typhus or scarlatina. Blisters may also be applied, and diaphoresis produced by the usual means; cold applications to the head the author considered useless, and even likely to increase congestion. Care was also requisite that mere congestion should not by the use of stimuli be forced into inflammation, which is the next stage if resolution or fatal termination does not take place. The author regarded idiopathic phrenitis as a most rare disease, and hydrocephalus acutus as congestion not inflammation. Phrenitis was well marked by the tensive pain increased on stooping, by the bright eye, hot skin, nausea, and vomiting, tendency to delirium, and occasional twitching of the muscles of the face; the most active antiphlogistic measures should be used.

There were other forms of headache easy of diagnosis, but of these the author would only mention the constant pain of head in children, with emaciation and want of sleep, and which diagnosed tubercles of the brain. The headache of pregnant females referred to the centre of the head, and attended with a remarkably slow pulse, and in which if bleeding is neglected, convulsions, abortions, and too often death, are apt to supervene; and lastly, the pain of the head occurring after a night's debauch, the cause of which, whether in the stomach or affected organ, the author considered not to have been sufficiently investigated.

Medical Gazette, Dec. 10, 1847, *p* 1032.

154 —CASE OF MONSTER.

By R. U. West, Esq , Hogsthorpe, Lincolnshire.

I was sent for on Sunday evening, August 15th, at about six o'clock, to attend the wife of Robert Garfit, a coach painter, residing in this village. It was her fifth confinement, and she had always had easy labours. She stated that she had had slight pains the whole of the day. Having ascertained, on examination, that the os uteri was well dilated, and having felt through the membranes one knee presenting, I at once directed my patient to go to bed.

When I came up stairs again, on examining again, I found a set of membranes still presenting, which I ruptured, and then I felt, besides the knee above mentioned, two feet, neither of which belonged to it; and, passing the finger higher up, I made out the foot belonging to the knee, and higher still, the toes of a fourth foot. My conclusion, of course, was that this was a case of twins, in which all the four feet had got down together; and that it was the other set that I myself had ruptured. Taking this view of the nature of the case, I did not anticipate the slightest difficulty; I passed my hand into the uterus till I reached the perineum of one fœtus, and, thus making sure that the two legs I proposed to bring down first belonged to the same body, I proceeded with the delivery of fœtus No. 1. These two legs came down with no more than the usual very gentle traction, till the knees had cleared the vulva, the toes being turned towards the os pubis, when I perceived that a greater amount of traction was gradually becoming necessary. As I could still feel the legs of the other child near the perineum, I considered that this unusual bulk by the side of, or rather behind, the buttocks of the one I was attempting to bring down, was sufficient to account for a little increase of difficulty, particularly as the body of the second fœtus appeared to be in front of the first, and had therefore crossed it. All attempts to push these feet out of the way were unavailing, for the obvious reason, as I thought, that there was no sufficient prominence which could hold them back. I continued accordingly to use more and more force, until I was well able to grasp both thighs with a cloth.

What was the cause of the difficulty that was now beginning to be of serious amount? I was forced to conclude that the fœtuses, by lying across each other, were somehow entangled.

I now passed my left hand (the mother lying on her left side) along the back of the child, to reach, if possible, the cause of entanglement. I had hitherto been using the right. With considerable difficulty I succeeded in reaching the left shoulder, but could not feel anything unusual there. I, however, managed to bring down the arm. After this, by grasping the thighs with both hands, and using very considerable force in traction, I brought the fœtus so low that the cristæ of the iliac bones were all but external to the vulva; but all my efforts to bring the child any further down were fruitless.

I went to the foot of the bed, and introducing the left hand again by way of the perineum, I tried what I could do by grasping the body of the child above its pelvis, while with the other hand I pulled at the legs; but it was useless: and, although my thumb and fingers seemed to pass nearly round the child, I felt nothing unusual. The two fœtuses seemed jammed together.

I began to think it would be necessary to let the other two feet come, in order to bring the cause of entanglement, whatever it might be, more within reach: but I durst not venture upon such a bold plan; for supposing the fœtuses to be separate ones, as was most probable, it would be unjustifiable, I thought, to do a thing so out of course as to allow the bodies of two full-grown children to occupy the pelvis at once. I was altogether so puzzled in mind and exhausted in body (my hands, with nearly three hours' incessant exertion, being so much cramped, that now and then I could hardly grasp anything,) that I determined on having the benefit of a consultation and of a second pair of hands. I felt also that a divided responsibility would be very desirable.

I therefore desisted from any further interference beyond an occasional examination during a pain, while a messenger fetched Mr. Gilby from Alford, a distance of seven miles. We then proceeded as follows:—

While my friend held the legs of the fœtus enveloped in a napkin, drawn down as far as he could, I passed the blunt hook up along the back and endeavoured to get a hold somewhere. As it would not hold by the shoulder, I forced it through the back close to the spine, and got a firm hold by one of the ribs. I may mention that the funis had been prolapsed more than an hour, and had long ceased to pulsate. By this plan—Mr. Gilby pulling at the legs, while I pulled by the blunt-hook—we, by using very considerable force, brought the body a little lower down, but we could not bring it away. The blunt-hook, having dislocated the spine and broken two or three ribs, began to tear out. It was therefore withdrawn, and I was searching for another place to fix it by, when I felt what, without sufficient consideration, I took to be the second arm attached to the body of the child already half born. Without giving myself time to reflect that it was too thick, down I pulled it. This was a leg. I could not have been deceived—it was certainly attached in some way to the same body of which the two proper legs had for some time been external to the vulva. I examined again, and made out this time plainly enough that the two fœtuses were united, and as far as I could reach I could not find out where they separated again. I directed Mr. Gilby's attention to this most extraordinary circumstance, which at once explained the immense difficulty we had experienced. There was nothing else for it now but to let both the bodies come together. They were united at the navel, abdomen to abdomen; and there was but one funis, which passed upwards into the two bellies at the point where the union commenced. Both were females.

We made several attempts with the flat hand passed along the united bodies to feel the neck, or, if there were two heads, the necks, with the division between them; for we could not tell whether there would prove to be but one head and one neck, or two. But until we had drawn both bodies down a little lower, we could not pass our hands high enough up. To make a little more room, while Mr. Gilby held the fœtuses as low down as he could, I passed my right hand up the back of the second fœtus, which, it will be understood, was lying next the os pubis, and with much difficulty succeeded in getting down its left arm, though I fractured the humerus in doing it. This done, we were enabled to draw down the bodies so low, that we could ascertain that there were in reality two necks, and consequently two heads. We now decided on separating the fœtuses. I therefore passed a bistoury, guarded by the forefinger of my left hand, as high up the union as I could do with safety to the mother, and plunging it in, brought it out again at the united umbilicus. We perceived that a large mass of liver had been cut into. This we tore away along with nearly the whole of the intestines belonging to both children. By so doing we diminished the bulk occupying the pelvis so much that we were enabled to draw the bodies down a good way further. I have said the blunt-hook had divided the spine, and made a considerable hole in the back of the first fœtus; and now that an incision had been made, which opened its abdominal cavity, this child was so nearly in two, that at any rate it was not likely to be of any further use for traction; so it was cut off and laid aside.

It was now our object to bring the bodies low enough to enable us to complete the separation, and afterwards open one of the heads if it should be necessary. I therefore passed the blunt-hook up between the children, and got a firm hold at the top of the junction, and while Mr. Gilby, again grasping the pelvis of the second child, made powerful traction with both hands, I made equally powerful traction with the blunt-hook. After two or three efforts of this kind, a violent expulsive pain coming to our assistance, the two heads, to our great delight, came suddenly away together, and complete delivery was effected.

Now, it has been mentioned that there was only the body of the second child left to pull by. This kind of traction brought the head of that fœtus below the chin of the other, the extent to which they had been divided having enabled the remaining undivided portion to stretch sufficiently to admit of this favourable change of position. Thus the heads, in point of fact, passed through the pelvis one after the other.

There was a good deal of hemorrhage after the birth of the children, and in two or three minutes the one placenta was without any difficulty extracted. The labour was over a little before midnight. The perineum was uninjured, and the mother has recovered without a single bad symptom.

The appearance presented was that of two perfectly formed and well-developed female children united from the umbilicus to the necks. They weighed, without the enormous liver and those portions of the intestines which were torn away, $11\frac{1}{4}$ lb. avoirdupois; and estimating the weight of the parts removed, and of the blood that was lost, at a pound and three-quarters, I think we may safely assume that they would have weighed, if entire 13 lb., which is two pounds more than the average weight of twins, according to Burns. The union at the top was formed by a common sternum, or rather by the clavicular extremities of two sterna united end to end, and passing nearly straight across. This double sternum was very short, and would, if removed, have presented the appearance of a nearly square piece of bone with a clavicle at each of the four corners. A kind of raphé could be felt at the point where the bits of sternum joined each other. Below the sternum, on both sides, the true ribs were united by short pieces of cartilage, which ran straight across from the ribs of one child to the corresponding ribs of the other. The cartilages of the false ribs turned upwards, and were attached to the under part of the cartilages of the lowest true ribs.

The liver having been cut nearly in two, and torn away along with nearly all the intestines, it was impossible to ascertain the relative position of the parts in that portion of the abdominal cavity in which the sac of the peritoneum was common to both fœtuses. There was but one umbilical cord, and, as that was not at all thicker than the average, I imagined it possible that the children might each supply only one umbilical artery; but, on examining the iliacs in one of them, I found that each iliac sent off its artery in the usual way. The aorta of the other fœtus, having been cut in two in the situation where the blunt-hook had divided the spine, had been torn away along with both kidneys; but there could be no doubt that this child supplied two umbilical arteries as well as the other. The cord must, therefore, have contained four umbilical arteries; but for various reasons, which will be more apparent when I come to the description of the heart, I think it probable that there was but one umbilical vein. I regret that, when I was searching into these matters the day after the delivery, the whole of the funis, as well as the placenta, had been made away with by the nurse.

Attached to the under part of the raphé of the common sternum, which formed a kind of roof to the two chests, was a membranous bag extending across from side to side, and down to the diaphragm. On cutting into this, I found it was a pericardium containing a curiously-shaped heart, common to both fœtuses. Passing the finger along the top of this heart, I found that its only attachments were at each side, the middle part for the space of about two inches being free. Flat and shaped like a kidney, it seemed to lie evenly between the two chests; but by stretching it downwards it assumed some obliquity, which I found was occasioned by the circumstance that each upper corner of the heart was connected with the right side of each fœtus. Each child had a complete pair of lungs, three lobes on each right side, and two on each left, the mediastina extending backwards from the centre of the common pericardium. Two thymus glands were attached to the under part of the sternum, separated from one another by the pericardium. Each fœtus had two kidneys, and the pelvic viscera in both were perfect and well developed. Although the liver was much torn and nearly cut in two, I was yet enabled to make out distinctly that it was a large one, common to both children. I could not find any gall-bladders, but probably there would be two; at any rate there must have been two ducts, one for each duodenum. The diaphragm was torn to shreds.

The heart itself is shaped like a kidney, and weighs exactly one ounce avoirdupois. On external examination it is found to possess the following peculiarities:—one enormous large auricular sinus having two openings into it at one corner, supposed to be the openings for a common superior and inferior *vena cava ;* with five auricular appendages—one very large under the openings for the cavæ, two at the other corner, looking like another large one split in two, and two smaller ones near to each other, hanging down on the other front of the heart between the roots of the two aortæ—all these appendages, communicating internally with the large auricular sinus. An aorta at each side of the heart, and a single pulmonary artery having its root near, and passing under that aorta which is situated nearest the openings for the cavæ. These three vessels all furnished with semilunar valves. No traces of pulmonary veins can be found

Thus this heart may be said to consist of but one auricle for the admission of blood, and one ventricle for its expulsion by means of three arteries. It is evident, therefore, that though it might do very well to support *fœtal* life, even for both children, it could not have supported extra-uterine life for more than a few minutes.

Now as there appears to be but one common auricle and one common pulmonary artery, is it not probable that the ascending cava of each fœtus, if they could have been examined, would have been found to have united in a common trunk before passing through the diaphragm? Is it not also probable that there was but one portal system? And one ganglionic system? But speculations of this kind, resting on probabilities, can hardly add to the interest of a case, in which the facts capable of demonstration are quite strange enough in themselves.

Medical Times, Nov. 12, 1847, *p.* 92.

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ADDENDA.

155.—ON THE ACTION OF COD LIVER OIL.

By Dr. Hughes Bennett.

Dr. Bennett believes that the therapeutic action of the oil is dependent essentially on its being a fatty matter, perhaps more easily assimilated to the economy than any other kind of fat. He thinks the views of Ascherson fundamentally correct, with this difference, that instead of oil and albumen uniting to form elementary cells, they only produce elementary molecules and granules, from which nuclei and cells are formed. To him it seems certain, that in chronic rheumatism and tubercular diseases, the albuminous compounds are in excess, and the oily compounds are diminished in the economy. The direct addition of the latter, therefore is the most rational method of supplying the wants of the system.

It may reasonably be argued, that if the theory of its action as fatty matter be correct, any other kind of oil would prove just as serviceable, and certainly there are many much more agreeable to the palate. Experience, however, has decided this question in the negative. The reason of this probably is, that continued doses of the purest vegetable oils, as that of the olive and almond, are more or less purgative, and thereby diminish, instead of improving the strength. It may also happen that the pungent properties of cod liver oil may have a favourable influence in retaining it on the stomach, and rendering it digestible. Lastly, it seems reasonable that an animal oil should be much more easily assimilated to the system than a vegetable one.

Since the publication of Dr. Bennett's work on cod liver oil, in 1841, the chemical views of Liebig and others have come into notice, and it is a remarkable fact that they perfectly harmonize with the histological and morphological theory therein advanced. For, whether we regard the oil as a carbonized principle of the food, as furnishing an element for respiration, or as necessary to the formation of elementary granules in a nutritive blastema, it seems equally fitted to serve the end in view.

That a purely chemical theory, however, is defective is proved by the fact, that *every* carbonized material is not fit for the purpose. We cannot produce an increased nutrition in rheumatic or phthisical constitutions by alcohol, sugar, or starch, notwithstanding their chemical composition is so similar. The chemists may argue that these are converted into fats; and in the physiological condition so they are. In a pathological condition, however, when the digestive powers are enfeebled, this does not take place; and, in giving an animal oil ready made, we save the alimentary organs the trouble as it were, of doing this. Hence, in constitutions which cannot digest food, or convert it into the oily element, the introduction of cod liver oil, in large doses, causes the necessary principle easily to be imbibed into the lacteals, where, uniting with the albumen, it constitues the elementary granules so necessary to nutrition.

It is on this account, that in every disease of a rheumatic or tubercular nature, attended with impairment of nutrition, emaciation, weakness, &c., cod liver oil is directly indicated. It operates by imparting to the system one of the great elements necessary for the nutrition of the animal economy, in cases where that element is essentially defective. In the hands of the rational practitioner, it is destined to be an important means of curing a class of diseases, hitherto considered of the most dangerous and fatal nature. As our knowledge of morbid processes improves, as the microscope and organic chemistry open up to us the primary alterations producing lesions of the body, the great importance of attending to the part played by the oily principle, as one of the essential elements of nutrition will become apparent. Then, when pathology is made the companion of physiology, and both constitute the foundation of a rational system of therapeutics, the use of cod liver oil will be found as beautiful in theory as it has already been found beneficial in practice.—*Bennett on Cod Liver Oil.* Edinburgh, 1848, 8vo.

Monthly Retrospect, May, 1848, *p.* 95.

156.—*On Iodized Oil.*—By M. Marchal. This preparation has superseded the other forms of iodine at the Val-de-Grace. M. Marchal, reasoning from the fact of the virtues of cod liver oil being due to the small portion of iodine it contains, concluded that a far more useful preparation of this substance than the iodide of potassium is found to be, might be made by combining it with an organic body. In this way a more complete assimilation of the substance, or, at all events, its longer retention in the economy, might be secured. He chose an oily body, because this forming an emulsion with the bile, would allow of the substance being digested in the small intestine, and enable the stomach to become relieved of its presence. In this way, far larger doses can be administered, if requisite, without irritating the latter organ; while the iodine is eliminated by the urine much more slowly and in far less quantities than is the case with the iodide. The trials which have been made are very satisfactory in their results, the progress of the cure of buboes and other glandular enlargements being much expedited, The iodine is dissolved in fresh almond oil as wanted, in the proportion of 1 part to 15; and this is afterwards worked up into an almond emulsion. The minimum dose is one grain.—*Gazette des Hôp.*, 1848, No. 13.

British and Foreign Medico-Chirurgical Review, April 1848, *p.* 557.

157.—ON THE FORMATION OF FAT.

By Dr. G. E. Day, M. A., Lecturer on Animal Chemistry at the Middlesex School.

To consider this question in its general bearings, we should turn our consideration to vegetable physiology, and endeavour to ascertain the nature of the process by which the fats are produced in plants.

Although we are incapable of describing the exact nature of the changes which actually occur, we have strong evidence that starch is the substance from which the vegetable fats are produced. Thus all the seeds from which we are in the habit of expressing oil—the castor oil seed, linseed, &c.,—in their early stages contain starch, but this starch gradually decreases as the quantity of oil increases; and when the seed has attained its full development the whole of the starch is found to have disappeared. Hence it seems more than probable that either directly or indirectly the starch is converted into fatty matter.

If, then, starch can be converted into fat in the vegetable kingdom, is it not possible that a similar conversion may occur within the animal organism? This question has given rise to a long and somewhat intemperate controversy between the French and German chemists: Dumas maintaining that plants prepare fat for animals, and that animals cannot do this for themselves; in short that all the fat which animals possess *originates* in plants: while Liebig, on the contrary, asserts that animals are able to produce fat in their own organisms. It would be impossible for me even to refer you to all memoirs published on the subject, and as I regard the fact that fat may be formed in the animal from starch and sugar as established beyond all doubt, I shall content myself with mentioning to you a few of the circumstances that have led physiologists and chemists to arrive at that conclusion.

a. The first and one of the most striking facts bearable upon this point, is one presented to our notice in a similar manner in both the vegetable and animal kingdoms.

A French chemist, M. Avequin, has described and analysed the wax obtained from the sugar cane, and he mentions as a singular peculiarity of it, that such kinds of sugar-cane as contain much wax have but little sugar. This leads to the inference, that one of these substances is formed from, or at the expense of the other, and as sugar is usually found at an earlier stage than fat, it might be fairly concluded that the sugar (a substance produced from the starch of the plant) had been converted into the wax.

It has, however, been shown by some excellent experiments of Gundlach, that wax can be prepared by bees from sugar; he fed bees with a solution of sugar-candy in water, and saw them producing wax. Thus sugar may be converted into wax, that is to say, into a fatty substance, both by the sugar-cane and by bees.

b. It is stated on good authority, that the West Indian negroes are remarkably fat and sleek during and just after the period of cutting the sugar-cane, when they always consume a large quantity of the juice.

c. I mentioned to you, when speaking of sugar, that butyric acid might be readily formed from it.

d. The fattening qualities of substances, which themselves contain little or no fat are well known. All farinaceous substances, such as rice, peas, beans, potatoes, and corn, are selected by preference for fattening animals, and Liebig has shewn that the amount of fat which is found on the fatted animal is very much more than can be accounted for by the mere fatty matter in the food. The following illustration, taken from experiments actually performed, will shew you this more forcibly.

In order to fatten three pigs in thirteen weeks, 1000 pounds of peas and 6825 pounds of boiled potatoes are requisite; the latter being equal to 1638 pounds of dry potatoes. Now the amount of fat in this food is twenty-six pounds; the peas contributing twenty-one, and the potatoes five pounds. One fatted pig gives on an average fifty-two pounds of fat, and the three pigs 156 pounds. Each pig before being fattened contained on an average eighteen pounds of fat, so that the three contained fifty-four pounds. If to these pre-existing fifty-four pounds of fat, we add the twenty-six pounds existing in the food, we get eighty pounds; but the pigs have 156 pounds between them. Hence it obviously follows, that the difference, which amounts to seventy-six pounds must have been produced from the starch, &c., of the food.

e. In the same way, the influence of ale in producing obesity is well known; yet ale contains only a very minute trace of fatty matter.

f. It is stated by Dr. Gregory, on the authority of Dr. Webster, of Harvard University, that maize, which is free from oil, is found quite as effectual in fattening animals as that in which oil occurs.

With regard to the manner in which the conversion of starch or (since starch can only be assimilated in the form of sugar) of sugar into fat takes place in the animal body, "it is certain," says Liebig, "that it only takes place in consequence of the simultaneous occurrence of the two processes of fermentation and decay or eremacausis." In other words, the conversion of a substance such as oxygen into another containing less oxygen, is determined by the splitting up, as it were, of the sugar into two compounds, one of which contains the oxygen which the other has lost, and consequently contains an excess of that element when compared with the sugar.

The oxygen in the process of decay combines with the hydrogen of the substance, and the highly oxidised compounds given out during fermentation are carbonic acid and water. According to this view, the conversion of sugar into fat is effected by the oxidation of its hydrogen, and by the separation of a certain proportion of its oxygen in the forms of carbonic acid and water.

Although Liebig strongly maintains that fat is thus formed in the animal body, he also fully grants that the fat which animals take in their food contributes to increase the quantity of fat in their bodies. Of this (he observes) we have certain and decisive proof in the pathological effects produced in persons who daily take a considerable quantity of cod liver oil.

There is yet another source of fat, to which no English writer, with the exception of Mr. Paget, seems to have alluded: I refer to the formation of fat from the protein-compounds.

From certain experiments made by Persoz on the fattening of geese with maize, he was led to conclude that they not only assimilate all the oily matters of the maize, and transform some of its starch and saccharine matter, but also transform a certain portion of their own tissues into fat. During the fattening, the blood becomes highly charged with oily matter, and much of its albumen disappears or is transformed.

Medical Gazette, Dec. 3, 1847, *p.* 969.

158.—CASES TREATED BY ELECTRO-GALVANISM.

By J. C. Christophers, Esq.

[The first case related is one of chronic rheumatism of three years' duration, and of most intractable character, the patient having undergone long courses of medical treatment, besides sea-bathing and homœopathic treatment. Though Mr. Christophers thought the case very unpromising, he determined to try galvanism: and]

First, says he, I passed a current down the spine for half an hour or longer, then from the spine to the hand for an hour. At the end of a few weeks she began to experience a feeling of warmth in the hands, and their strength gradually returned, so that by degrees she resumed her labours in her laundry, continuing the galvanism daily, as before. Her hands have now almost, if not quite, acquired their former power, (the distortion of course remains,) though she is still under treatment for the feeble condition of her ankles and knees, and is galvanized three times a week, with increasing benefit to both. Last winter this patient was confined entirely to her bed, this winter she has not kept her bed a day; moreover, she has regularly followed her occupation through a very severe season, and surrounded by circumstances eminently tending to produce an accession of her disease.

Case 2.—A fine well-made man, in the prime of life, was attacked, some years since, with severe pain about the hip-joint, extending to the knee, which was at first treated as rheumatic, by drugs, counter-irritants, &c., and by the introduction of needles, at short intervals, from the hip down to the knee. No benefit was thence derived, and he was obliged to throw up his employment. He consulted several practitioners without obtaining relief, and amongst others myself. He complained of great pain in the buttock and in the knee-joint. The affected limb was two inches shorter than the other, much less in circumference, flabby, and cold; the power of motion was perfect, though sensation was evidently impaired. Here was another intractable case, in which a host of remedies had been tried without success; still there were circumstances about it that induced me to add electro-galvanism to the number, and with these results—that the pain gradually decreased, and the limb regained its size, strength, firmness, and temperature, and that the patient is now able to earn his living by following his occupation. The shortening of the limb of course remains.

Case 3—Is an abstract of an account by the patient himself. In July, 1833, he was attacked with fever, from which he recovered in a week or two, but found his left foot numbed, and that he walked lame. This increased; then came a difficulty in retaining his urine. In this state he became a patient in St. Bartholomew's Hospital. Liniment was applied to the foot, and four moxas to the loins, followed by poultices, and warm baths three times a week. After three weeks, he left the hospital unrelieved; but the urinary symptoms remaining troublesome, and weakness increasing, he became an out-patient at St. George's Hospital, where he was several times cupped, often blistered, &c. The patient reports that he remained in the same state till 1839, when he was seized with pain in the back, which was relieved in a week or ten days. Severe pain then attacked the foot in which he first experienced the numbness, and two months later the other foot, with the leg and thigh, became painful, and he was for three weeks in continual agony, the urinary annoyance continuing very troublesome, and the pains occurring occasionally, sometimes in one leg, sometimes in the other, occasionally in both, but never extending beyond the middle of the thigh. He found great difficulty in walking, which appeared to have increased during the previous year.

Such was the state of this patient when I saw him, for the first time, last summer. There was little doubt he was suffering from organic disease in the spinal cord, and I had no difficulty in tracing its origin to a severe injury done to the back, by a fall from a horse, some years since. Then came the question—was this a case likely to be benefited by galvanism? I thought not; but this patient was the friend of the subject of case 2, and was most anxious it should be tried. I consented, and the result was as follows:—The incontinence of the urine gradually subdued, though it never entirely ceased; the legs acquired strength; the gait became firmer, and less tottering; and the foot acquired warmth. Such was the state of matters after three months treatment by galvanism! What further improvement might have been attained, (cure of course was always out of the question,) had the means been pursued, must be conjectural; for at this period the patient became weary of the treatment, and ceased to attend. That any amelioration, should be attainable in so bad a case must speak well of the means that procured it; and though I do not venture to hold it up as one of success, I do hold it to be successful in some degree, inasmuch as galvanism doubtless did more to relieve than any of the other remedies employed.

Lancet, Feb. 5, 1848, *p.* 152.

159.—*The Electrical Cloth:—a Mode of Employing Electricity by Simple Friction.*—The following plan is recommended for the preparation of electrical cloth. Five parts (by measure) of monohydrated sulphuric acid are to be mixed with three parts of monohydrated nitric acid. The cloth, either cotton or linen, is well saturated in this liquid (one part of cloth requiring fifteen parts of liquid by weight), and allowed to digest for an hour. The loosely adhering acid is then squeezed out of it, and it is thoroughly washed in water. In order to deprive it of any sulphuric acid, it is soaked in weak ammonia, and again washed. It is afterwards plunged in water slightly acidulated with nitric acid. This neutralizes any ammonia which may be left, and at the same time increases the electrical and combustible properties of the cloth.

It is with this species of *pyroxyline* that M. Meynier has produced by friction large quantities of electricity: and some practitioners have used it with great benefit, in the form of local application and frictions, in various disorders of the nervous system.

Medical Gazette, Feb. 18, 1848, *p.* 301.

160.—*Case of Recovery from a Large Dose of Strychnia.*—By Dr. T. Anderson, Edinburgh.—[A gentleman who was subject to tic-douloureux and was accustomed to take large doses of muriate of morphia for its relief, took one day three and a half grains of a powder which he had lately bought for mórphia, and went out upon his business. Shortly afterwards a sense of numbness in the legs came on, and gradually increased in severity until he had great difficulty in walking, and had to be supported on his way home. On reaching home he felt better and sat for a while, and then went to bed, about five hours after the first appearance of the symptoms.]

Just previous to stepping into bed, in order to insure a good night's rest, of which the recent symptoms rendered him somewhat doubtful, he took a second dose of the powder equal in amount to the first. In less than ten minutes after, he was seized with a violent tetanic spasm, affecting the legs and muscles of respiration, and had only time to call out for assistance before the sensation amounted to that of absolute suffocation. Fortunately, assistance was close at hand, and he was immediately raised up in bed, with the effect of entirely relieving the sense of suffocation, and a medical man sent for. Spasms now followed each other in rapid succession, the intervals being about a quarter of an hour or twenty minutes, and the affection was confined principally to the legs, back, and respiratory muscles, the arms being comparatively unaffected. The numbness and dragging of the muscles, which had been continuous during the first five hours, disappeared entirely during the intervals of the spasms, and the patient was left without any uneasy sensations, excepting the exhaustion of the previous fit and the apprehension of its successor. During the whole of this time he was not only perfectly conscious, but his senses were preternaturally exalted, and he distinctly heard a variety of whispered observations of the physicians and his friends, which, from their tenor, were obviously not intended to reach the ears of the patient.

The paroxysms, after continuing for some time, began gradually to diminish in violence, the intervals becoming longer, and the duration of each spasm shorter, and it was hoped that they were about to pass off, when all at once they returned in their original violence. This proved, however, to be the last expiring effort of the poison; for the symptoms now entirely ceased, about thirteen hours after the first dose was taken. At the conclusion of the spasms, the patient was left in an excessively exhausted state, and was unable to turn himself in bed; from this, however, he recruited with great rapidity, as he was able to get up on the evening of the next day, and on the second he walked out and went about his usual business. The most remarkable fact connected with the case is, that, from that time, the attacks of tic-douloureux entirely ceased, and he has not since had any return of it. The medical treatment employed in the case was unimportant, and had not any effect on the progress of the symptoms.

[Analysis of the remainder of the powder, showed it to be tolerably pure medicinal strychnia; and the seven grains which he had swallowed would be equal to nearly three ounces of nux vomica. This is the largest dose from which recovery has been recorded,—one or two grains of strychnia, or a quantity of nux vomica equal to one-third of a grain, having proved fatal. As to the mode of detecting the strychnia, Dr. Anderson observes:]

I have found Marchand's test a very good one, and possessed of a considerable amount of delicacy; and, as I do not recollect to have seen it mentioned in any of our medical periodicals, although it has been known for some years, I may simply state, that it consists in pouring upon the strychnia a few drops of strong sulphuric acid, mixed with about one per cent. of nitric acid, and then adding a small quantity of peroxide of lead, when immediately a fine violet colour is produced. The experiment succeeds best when the mixture is made in a watch glass, care being taken that the quantity of peroxide be extremely small, and then, on mixing with a glass rod, the colour makes its appearance in streaks.

Monthly Journal, Feb., 1848, *p.* 566.

161.—*Recovery from a Large Dose of Aconitina.*—By Dr. Golding Bird.—[No case of poisoning by this deadly alkaloid has hitherto been published, and consequently the description given by Dr. Bird is highly important. The patient was a highly educated gentleman, and obtained the aconitina by means of a prescription of his own writing, from one of the most respectable druggists in London.

It is supposed that almost immediately after taking the poison he fell, and struck his head a severe blow against a piece of furniture, and that the poison, or the blow, or both, produced immediate and violent vomiting; but how long it may have been before he was discovered cannot be stated.]

An excellent and most intelligent surgeon, and shortly after, a physician, were called to him; and about two o'clock in the afternoon, which must at least have been eight hours after taking the poison, Dr. G. Bird met these gentlemen. The patient was then fearfully collapsed; the surface cold and sweating: quite pale; the heart's action scarcely perceptible; pupils acting to light; no paralysis whatever, either of sensation or motion. Notwithstanding the intense exhaustion, the intellect was unimpaired. The most prominent symptom was the repeated and terrific vomiting of a brownish fluid. This vomiting was, however, peculiar, and perhaps hardly deserved that title, the patient really being seized with a kind of general spasm, during which he convulsively turned on his abdomen, and with an intense contraction of the abdominal muscles, he jerked out, as it were, the contents of his stomach, with a loud shout, depending, apparently, on the sudden contraction of the diaphragm. These exhausting and distressing symptoms had occurred every minute or two. On attempting to make him swallow any fluid, a fearful spasm of the throat took place, producing the distressing effects so well known in the hydrophobia from the bites of rabid animals: this was not produced by the sight of water, but the convulsive movements of the body, and the emptying of the stomach, were excited by abruptly touching him. He was placed in a hot bath, afterwards removed to bed, covered with blankets, a large mustard poultice applied to the scrobiculus cordis, and an enema of turpentine administered. He remained in much the same state, the sedative effects of the poison on the heart gradually lessening, so that at nine o'clock the pulse was easily perceptible, although weak; the hydrophobic spasms were, however, then produced by every attempt to swallow, so that none of the medicines suggested for him could be made use of. It was therefore determined merely to administer enemata of beef-tea, with the yoke of an egg, and ten grains of laudanum, chiefly with the intention of procuring rest and giving support. He had a fearful night of exhaustion and spasm; intellect perfect, and even vivid, so as to enable him, whenever he recovered a little from his exhaustion, to carry on a conversation in the French language with an excellent and distinguished clergyman, who shared the task of soothing and watching him with his zealous surgeon. After this hard struggle with death, this very remarkable man emerged from the effects of the poison; and at two o'clock on the following day, when another consultation was held, he was regarded as convalescent. Dr. Golding Bird drew attention to the fact, that although at least *two grains and a half* of aconitina had been swallowed, yet that the majority of the poison must have been got rid of during the vomiting which followed the injury to the head, resulting from the fall. He also pointed out the remarkable train of symptoms developed, especially the convulsive vomiting and imperfect hydrophobia, as possibly being characteristic of the effects of the poison. For although they differed importantly from the effects of aconite root, with the exception of the sedative influence on the heart, still such a difference becomes intelligible when it is recollected that a pure alkaloid often differs materially in its physiological action from that of the plant from which it is an extract, as shown remarkably in the case of the alkaloid conia.

Medical Gazette. Jan. 6, 1848, *p.* 30.

162—*Mode of Arresting the Bleeding from Leech-bites.*—By J. P. Vincent, Esq.—It is a frequent embarrassment to the practitioner to find that after he has applied leeches they will go on bleeding beyond all expectation, and soon place children in danger of life. I have often been called in upon such emergencies, and never found the following expedient fail, simple as it is. I wind a very small piece of lint into a hard knot, so as to be less than a pea, and, wiping the orifice quite clean of blood, and placing this little pad upon the bleeding point, then taking advantage of the elasticity of this enlargement, I draw a strap of adhesive plaster over it. This has been quite enough to stop it perfectly, and on the third day there is an end of the wound. The point to be observed particularly in this application is, that the plaster may be long enough to ensure a steady pressure of the pad by drawing up the integuments from a distance, by which the elastic quality of this structure gives a permanent pressure; but even this pressure should be confined as much as possible to the bleeding orifice. An extension of this principle has enabled Mr. Vincent to carry out the plan so as to arrest the bleeding from arteries of tolerable size, such as the superficialis volæ and the superficial palmar arch.—*Mr. Vincent's Observations on Surgical Practice.*

Medical Gazette, Feb. 3, 1848, *p.* 339.

163.—*On Sea-Sickness.* By Dr. F. W. Fisher.—First, the sickness produced by the sea, by riding in carriages, by swinging, are all phenomena of the same nature, determined essentially by the influence exercised on the circulatory march of the blood in the movements that the body undergoes under these different circumstances. Second, this influence has its principle in diminishing the ascending force of the excitory liquid in the aorta and the arteries branching from it; from this results a hyposthenic state of the brain by anemia or hypohemia. Third, the insufficient excitation of the cerebral organ determines, by sympathy, spasmodic contractions of the diaphragm, vomitings—which have a particular tendency to reconvey the blood which is wanting towards the nervous centre. These efforts are a crisis which takes place in a conservative end. They manifest themselves not only in sea sickness, but in many other circumstances where the brain becomes suddenly deprived of its normal supply of blood; for example, in persons not affected by phlegmasia, who are bled.

Treatment.—There are two orders of means to be employed. The first consists in removing one's self as much as possible from the cause—*i.e.*, from the motions of the vessel, in remaining in a recumbent position, in a hammock suspended without sensible friction at its points of attachment. The second has for its end to combat the effects of the cause on the organism. It acts especially to this end in stimulating the circulatory function by all the agents susceptible of increasing its energy. Thus, a tonic regimen, and active corporeal exercise for some days preceding embarkation. At sea, if the weather permits, one ought to keep on deck, in the breeze, make large inspirations, walk quickly until he perspires or is fatigued; or, better still, to engage in some hard exercise, even with the sailors in working the vessel. Hard work, that which requires great muscular effort, is the surest prophylactic against sea sickness. The girdle has also its advantages in contributing to force the blood towards the head, and perhaps in seconding the contractile force of the heart. Before the manifestation of the nausea, warm and exciting drinks are favourable. Thus coffee, tea, with the addition of a little brandy, may give a greater disposition to resist it, in stimulating the circulation and maintaining a diaphoretic state of the skin. Among the medicines, those which have an analogous effect on the economy may be administered with advantage, such as opium, saffron, acetate of ammonia, &c. When the sickness is declared, recourse is only to be had to the palliatives; lemons, exciting aromatics, relieve some persons; also the horizontal position, especially with the head low, in a hammock or bed suspended like a compass. But if one wishes to shorten the duration of the nauseous influence of the sea and diminish the tribute he must pay for a nautical acclimation, he must struggle with all his energy against the tendency to inaction.

Dublin Medical Press, Dec. 15, 1847, *p.* 376.

164.—*On the Use of India-Rubber as Adhesive Plaster.*—By D. F. Eyre, Esq.—If liquid India-rubber, spread upon calico, or other material, by a stiff brush, or by a knife, be used as adhesive plaster, it will be found to answer far better, in almost every case, than any other adhesive material, as it sticks firmly, is pliant, produces no irritation of the skin, and will bear lotions, or washing over it. It is also most valuable in cases where the skin requires a soft plaster of an unirritating nature for its defence, as in old persons, or others long confined to bed. In such cases, it is better to use either soft leather or the vulcanized India-rubber, made in thin sheets; the latter, from its elasticity, is often the best, as it stretches with the skin on every movement of the body. To many kinds of wounds, from operations or otherwise, strips of thin vulcanized India-rubber, spread with the liquid, will be found invaluable as elastic adhesive plasters, as they become firmly attached to the skin, and give way to all its movements. But should any wounded part require a portion of the plaster to be non-elastic, as in the case of operation for hare-lip, &c., then, in order to secure such part from being stretched, a short piece of calico, about an inch in length, should be stuck upon the middle of the elastic plaster, by which means that portion would become stationary.

If a circular piece of thin vulcanized India-rubber, about two inches in diameter, be spread with the liquid, and applied on the abdomen of an infant having umbilical hernia, and a common bandage, such as is generally used for infants, be passed lightly round the body, the protrusion will be instantly checked; and if the same plaster be again spread with the liquid and re-applied, when it comes off from time to time, no trouble will be experienced by the infant. It is not necessary to use any pad or compress.

The liquid, which is like thick treacle, and the vulcanized India-rubber, may be procured in most large towns. (They are manufactured in Manchester by Charles Mackintosh & Co.) In most cases, the thin sheet of the vulcanized India-rubber, or that sold as No. 50, will be the most suitable; in other cases, the thicker, or the No. 36, will be advisable.

The most convenient method of carrying the liquid is in one of the small, compressible bottles, used by painters, holding about an ounce, so that, on removing the screw-cap, any required quantity can be squeezed out.

The above statement will give a general idea of the subject; the materials may of course be used in a vast variety of forms.

Lancet, Feb. 19, 1848, *p.* 210.

165.—*On the Treatment of Mammary Abscess.*—The following is a case of no very unusual occurrence:—A mother loses her infant, and, broken-hearted at the event, she neglects to pay that attention to herself which her case requires. No attempts being made to relieve the distended breast of its secretion, the gland becomes hard and painful, and at length abscesses form in different situations. If the treatment is confined to the evacuation of matter by puncture, and to the application of fomentations and poultices but little good is done. The former abscesses continue to discharge; fresh ones are constantly forming, and the woman at length sinks into a state of hectic. Means should be used to stop the secretion of milk, which has been going on all this time, and perpetuating the mischief. We have no better means of effecting this than by the admistration of a hydragogue purgative. I am usually in the habit of prescribing the sulphate of magnesia in the compound infusion of roses, to which, when there is much hectic and debility, I add some quinine, and dilute sulphuric acid. The effect of this treatment is sometimes almost magical. I have known a woman, who for months had been suffering from a succession of mammary abscesses, begin to get well from the moment that the salts produced its liquid evacuations from the bowels; the secretion of milk ceased, and the purulent discharge diminished, a more adhesive inflammation being established in the place of these two actions.

Provincial Medical and Surgical Journal, March 22, 1848, *p.* 161.

166.—*How to prevent Bedsores.*—By DR. PUREFOY.—The following ingenious method of preventing those dreadful specimens of disease or neglect sometimes presented in even our best-regulated institutions is suggested by Dr. Purefoy, in a former number of the Dublin Medical Press. The doctor may be allowed to describe his practice in his own words:—

"Having lately to treat a case of compound fracture of the tibia in an old man, the leg was comfortably placed upon the double inclined plane, and the case went on very favourably for some days, when it was thought that the leg must be placed upon the side, in order to relieve intolerable pain of the heel, and to obviate sloughing of the integuments. In this dilemma, it occurred to me to try to support the heel upon a bladder partially inflated, since pads failed completely in affording the desired relief. An ox-bladder, previously moistened in tepid water, and afterwards oiled, was placed under the heel in a flaccid state, and subsequently filled gently with air. so as to give the heel the necessary elevation, and promote, as far as might be, the comfort of the patient. The experiment was successful beyond my most sanguine hope, as the air flowed underneath and upwards by the sides of the foot and ankle, thus affording an unusually agreeable and secure support to the foot and instep, at the same time relieving the heel from undue pressure: the old man exclaimed in a rapture, 'O, sir, I'm in heaven;' Suffice it to say, that by renewing the bladder once only, the cure was perfected so far at the end of a month that the patient could leave his bed, and during this time he was completely relieved from the intolerable pain which at first was so very troublesome. I have lately prevented the occurrence of bed-sores, by the aid of a bladder placed under the buttock, and rolled up in a soft napkin, having previously been partially filled with air, although the patient had been for nearly two months lying upon his back, suffering under extensive gangrene, as the result of extravasation of urine."

Lancet, April 15, 1848, *p.* 423.

167.—*Animal Ligatures.*—Mr. WRAGG states that he has been in the habit of using these ligatures for upwards of ten years. In the course of this period he has tied the arteries of the hand, fore-arm, leg, and thigh, and believes that the knot has always been removed by absorption. The ligature used has been the fibres of the sinew of the deer, twisted to the requisite strength. The sinew is first dried and the fibres are then obtained by tearing them out from the middle towards the extremities. When used the ends are cut off close to the knot.—*Southern Journal of Medicine*, Sept. 1847.

Provincial Medical and Surgical Journal, Feb. 23, 1848, *p.* 110

168.—*On Hospital Gangrene*—By HOLMES COOTE, Esq., Demonstrator of Anatomy, at St. Bartholomew's.—[After relating a series of very interesting cases of hospital gangrene, which occurred in St. Bartholomew's Hospital, in 1846–7, Mr. Coote remarks,] Hospital gangrene had not been witnessed, as an epidemic disease, in St. Bartholomew's Hospital, within the memory of any of the present medical officers; and diffused inflammation of the cellular membrane, in so severe a form as here described, is of the very rarest occurrence. These two singular affections broke out simultaneously, and were confined, almost without exception, to a few of the men's wards in the range of buildings forming the north-eastern side of the hospital quadrangle, and to a newly-erected neighbouring edifice, of similar aspect, appropriated to the reception of patients who have either undergone severe operations, or sustained serious injuries from accident. The former disease attacked, in most instances, recently incised wounds, of inconsiderable extent. There was little or no preceding constitutional disturbance; some patients complained of occasional darting pains about the brow, and of inability to sleep, but the skin was cool; the tongue clean and moist; and the appetite remained unimpaired. The first symptoms were the suppression of the ordinary healthy puriform discharge, and the appearance of a dusky-red inflammatory blush in the neighbourhood of the wound. This was accompanied by immediate and rapid sinking of the pulse, which became accelerated, beating with regular strokes, between 90 and 100 in the minute. In some cases, a stinging, burning sensation was felt in the wound. Within four-and-twenty hours, the edges, which had become undermined, everted, and eroded, separated, and there was exposed a glazed surface, covered by a tenacious grey or fawn-coloured secretion, which, in thirty-six hours, became a circular, buff-coloured slough. The sore, surrounded by a dusky red zone, extended both in breadth and depth, by a mixed process of sloughing and of phagedænic ulceration, and rapidly disorganized the soft parts, down to the subjacent bones. A thin and extremely offensive discharge was secreted; and in many instances the pain became so severe, that patients compared it to the 'burning of a hot coal.' The spontaneous subsidence of the disease was marked by the disappearance of the dusky-red discolouration of the skin, and by the rising of the pulse. The secretion lost its fœtid odour, and became more puriform; the slough, which, if large, was dry and black, separated, and left a granulating and extremely sensitive surface, which cicatrized very slowly.

The only local treatment of any avail in arresting the progress of the disease, was the free application of the undiluted nitric acid to the surface and to the edges of the sore. It sometimes happened, that the eschar, thus formed, separated in a few days, and left a perfectly healthy surface, which healed without an unfavourable symptom; but, in other instances, the remedy failed; the sloughing process recommenced, and local applications became of secondary importance. The common bread-and-water poultice, or the charcoal poultice, (of which the latter is extremely useful in correcting the horrible fœtor proceeding from the sore,) were the most comfortable to the feelings of the patient. Opium was given in large doses, to relieve pain, and to procure rest. Quinine and ammonia were administered with advantage, as the stomach would bear them. The patients, who, almost without exception, retained the appetite, were allowed meat, with a moderate quantity of beer, wine, or spirits; they were separated as much as possible one from another; and several shut up singly in smaller rooms, were isolated from all communication with the rest of the hospital.

In attempting to investigate the causes which gave rise to these maladies, care must be taken not to confound hospital gangrene with sloughing phagedæna, as witnessed in patients suffering from syphilis, or broken down by intemperance and irregular habits. In both classes of cases the sore is characterized by a foul surface, rapidly spreading by a mixed process of ulceration and of sloughing; but the latter disease occurs in isolated cases, and is confined almost exclusively to the lowest order of prostitutes. Hospital gangrene spares neither the young nor the old, the temperate nor the intemperate; attacking wounds of inconsiderable extent, it produces a frightful sore, which frequently spreads in spite of all efforts to restrain it.

[Mr. Coote makes some further observations upon the causes which produced this disease. The hospital stands on the highest site in the city of London, the wards are spacious and not overcrowded with beds, and the ventilation and drainage are perfect. These circumstances, he thinks, exclude the idea that *local* causes originated the disease, especially since it vanished as suddenly and as mysteriously as it appeared. Thermometrical variations, Mr. Coote believes to have had a good deal to do with the matter: the summer of 1846 having been intensely hot, and having been followed by a early and severe winter. The occurrence of hospital gangrene in St. George's hospital and other places, at the same time as at St. Bartholomew's, undoubtedly favours the idea that the causes of the disease are to be sought for in atmospheric conditions.]

Lancet, Nov. 13, 1817, *p.* 515.

169.—*On Gangrena Senilis.*—By Professor Syme.—"Although the local soothing plan advocated by Mr. Pott alleviates the patient's sufferings, and delays the progress of the disease, it never, in any instance that has fallen within my observation, proved sufficient to arrest completely the morbid action. In order to attain this more important object, it is necessary to lower the tendency to excitement throughout the system, by enforcing a strictly vegetable diet, abstinence from every kind of stimulant, and the maintenance of perfect quiet in the horizontal posture. I am aware that the proposal of this starving plan may appear rather startling, and unsuitable for the old and debilitated persons who are chiefly subject to the complaint; and it sometimes requires considerable firmness to get the requisite measures carried into effect, when opposed by professional as well as vulgar prejudices. But the admitted hopelessness of the case, under ordinary treatment, should encourage the trial of other means, especially such as have stood the test of experience. Hospital practice does not frequently afford examples of this disease, to the production of which redundant nourishment, though not essential, seems powerfully predisposing; whence it is met with more often in persons of easy circumstances than in poor people, who are able to obtain merely the necessaries of existence."

In superficial gangrene of the extremities occurring in persons of the former description, Mr. Syme has uniformly observed—

"That whether the patient was stimulated by an additional allowance of food and wine, or was permitted merely to continue his ordinary diet, the sloughing action prevailed in opposition to every sort of soothing application that could be tried locally. But when the starving plan was adopted, and the patient restricted to vegetable articles of support, the redness has quickly disappeared, the pain has gradually decreased, and the sloughs, ceasing to extend, have been detached from a subjacent healing surface of granulation, which before long formed a sound cicatrix. The only means employed, on such occasions, in addition to the vegetable regimen, have been linseed poultices, and the muriate of morphia, given freely, either solid or in solution, so long as the nocturnal pains continued. It may be added, that no inconvenience has ever been sustained, to my knowledge, either from adopting the spare system, or resuming the ordinary one, even if the age of the patient was beyond eighty years."

We have always regarded the ordinary form of senile gangrene, in its commencement at least, as a disease of active inflammation; still, it appears to us that the surgeon must be occasionally prepared to meet with cases of dry gangrene in aged persons depending solely upon deficiency of arterial supply: we are not disposed to say that, even in these, an actively stimulating plan is the most advisable, but we apprehend that, in such instances, the author's treatment would be in some degree modified by the cause and manifest characters of the disease.

Medical Gazette, Feb. 25, 1848, *p* 334.

170.—*On the Treatment of Snakebite.*—By W. Bland, Esq., Sydney. —[A gentleman was bitten in the leg by a copper-coloured snake, *Coluber fulvus Australicus*, common in the neighbourhood of Sydney. He immediately applied two tight ligatures upon the limb, and when he got home took a full dose of laudanum with brandy. Mr. Bland saw him about an hour and a half after the accident, when he was suffering from pain in the region of the heart, with a feeling of constriction about the chest; the local pain had entirely ceased. Mr. Bland says:]

The part bitten was now fairly included between the blades of a pair of tenaculum forceps, raised from the subjacent tissues, and completely cut out with a scalpel, a circular excavation in the skin and cellular membrane being left, of about the size of the nail of the ring finger. A cupping-glass fitted with an air pump was now applied; but being found inconvenient, from the smallness and rounded form of that part of the limb where the bite was situated, this was immediately dispensed with, and its use was replaced by the spontaneous services of some of the men on the establishment, who kindly offered to suck the wound, and continued to do so with the greatest readiness, and every desirable effect, so long as their assistance was thought requisite.

The immediate effect of the suction, as I have always found on these occasions, was to relieve the pain in the heart and the constriction of the chest, which had both left in about half an hour after the suction had been commenced. The pulse, also, which had ranged from 96 to 98, fell to 82.

[The pulse, however, shortly rose, and he had giddiness and dimness, but these symptoms were ameliorated by giving a teaspoonful of turpentine. In a few hours, the pain in the heart and the constriction of the chest having returned, he was bled to 16 oz. with relief; in the evening, these symptoms recurring, a further bleeding was practised, and the head, face, and hands, bathed in cold water. In the morning he was better, but during the next evening and night had slight attacks of constriction, which were relieved by the application of a stimulating liniment to the chest. After that time he had no further symptoms. Mr. Bland having seen many cases of snake-bite during the last thirty years, states that in their treatment, the following means should be resorted to, whatever be the species of snake which has given the bite:]

1st. The immediate application of a ligature, whenever practicable, between the bite on the limb and the centre of the circulation.

2nd. The excision of the bitten part in the manner above described.

3rd. The suction of the wound, or the application of the cupping-glass.

4th. The exhibition of stimulants, as oil of turpentine, aromatic spirit of ammonia, brandy or other spirits, eau-de-luce, port, sherry, champagne, or other wines.

5th. Bleeding, more especially for the relief of the heart and chest, and perhaps of the head.

6th. The application of cold to the head, face, and hands, by the occasional washing of those parts with cold water, according to the patient's wishes and feelings, and due ventilation of the apartment.

7th. Sound sleep should also be prevented for some time; and should the weather be cold, or the patient appear chilled, which occasionally happens, due means should be resorted to in order to restore warmth.

Lancet, Jan. 15, 1848, *p* 71.

171.—*New Instrument for Tarsal Tumours.*—By W. R. Wilde, Esq., Dublin.—In our Report for last year we mentioned that Dr. Desmarres had invented an ingenious description of forceps for the removal of tumours from the eye lids, and we described the mode of using it. We stated, however, our objection to its use,—that it was only applicable to the removal of those little bodies by an external incision, a plan few operators will, we think, now agree to. We have, however, taken the hint from our Parisian contemporary; and had an instrument constructed on precisely the same principle, but modified so as to answer the purpose to which we apply it.

When using it, the ring portion is slipped under the lid, upper or lower, so as to encircle the tumour; the blades are then screwed together with the necessary degree of tightness, and the lid everted. By this means we have the lid fixed,—a perfect tourniquet applied, by which all hemorrhage is prevented, and, in all probability, pain is lessened, the globe defended, and a point of resistance obtained in the solid blade of the instrument, by which also the tumour is pressed forward. Having opened the sac freely, we turn out its contents into a fine silver spatula, or a Davielle's scoop; then apply a fine probe, pointed with nitrate of silver, over the interior, smear the surface with a little oil, restore the position of the lid, and loosen the forceps. The instrument differs from Desmarres' in the position of the screw, the size and curvature of the blades, and in the mode of its application.

Dublin Quarterly Journal, May 1848, *p.* 475.

172.—*On the Treatment of Caries.*—By E. W. Tuson, Esq., F.R.S., Surgeon to the Middlesex Hospital.—Many cases of caries have fallen under my notice, affecting in different cases almost the whole of the bones of the body. Caries of the spine, pelvis, bones of the inferior extremity, superior extremity, head, and face, have frequently been under my care. Various remedies and different applications have been employed; it is only within the last few years, however, that I have been able to find a medicinal agent to produce a permanent and beneficial effect upon caries of the bones; I am able now to state that I have been successful in this respect, owing to the researches of Liebig in the furtherance of organic chemistry, and the progress made in our knowledge of the formation of several parts of the human frame. The close identity and chemical composition of several parts of the animal body, according to the best authorities we are able to consult, clearly point out that dried blood, dried flesh, and other parts of the animal textures correspond very closely in their chemical composition with proteine, or that chemical basis which is essential to the formation of the various parts of the human frame, and which enters into the composition of the structure of every part combined with other elements. If we examine the chemical formulæ of some of the parts entering into the structure of the body, and we will take chondrine (the substance of the cartilages of the ribs), the composition shows that, when proteine passes into chondrine, the elements of water with oxygen have been added to it, while, in the formation of serous membranes, nitrogen also has entered into combination. Thus, then, proteine combined with water and oxygen form the cartilage of the ribs, and no doubt the cartilages in general, whilst a combination of proteine with nitrogen forms the serous membranes. Some of the other structures are composed by other combinations of the elements of proteine combined with sulphur and phosphorus, whilst other parts of the human frame are combinations of proteine with certain salts or acids; but still in every structure proteine more or less abounds. The frame is formed from the blood, that is, the chemical compounds of proteine in the blood, during the different stages of our existence in infancy, youth, puberty, and old age; through these several periods of our life the circulation of the blood forms the various and minute structures which constitute our entire body. It is essential that the blood should be furnished with the elements so requisite for the formation of the several parts, and more particularly so when a disease exists, because it is requisite to establish a healthy action and restore parts that have become in a state of morbid activity.

The knowledge that proteine chemically formed various structures of the frame, and the supposition that the want of this chemical basis might encourage the development of diseased structure, and, in a measure, prevent the restoration of certain parts, led me to employ it as a medical agent, and carefully to watch its effect upon the system. I prescribed it in cases of cancer without any visible beneficial result. I next gave it in extensive ulcers with the utmost success—in cases of large sloughing ulcers of the legs. The ulcers soon became healthy and quickly healed, the patients speedily recovering health and strength. I then watched its effect in scrofula, and found a cure accomplished in many cases. A boy was admitted under my care at Middlesex Hospital with extensive caries of the metatarsal bones; it was considered necessary upon consultation to remove the bones by amputation; but, as the patient had enlarged glands of the throat, it was deemed advisable to improve his general health previously to the operation, and for this purpose I prescribed ten grains of proteine twice a day. In the course of two months the caries of the bones. for which amputation was considered necessary, was completely cured, and solely by the administration of proteine, as the disease had resisted the action of all other means which had been employed for a considerable time previously. A youth was admitted with caries of the tibia and bones of the foot; it was considered by the surgeon who sent him into the hospital that he must lose his leg; proteine was prescribed, and he was discharged cured. Thus, then, from carefully watching the effect of this remedy I was able to discover a very beneficial agent for the relief of one of those diseases of the bones which few remedies accomplish; and, from repeatedly observing the result of the exhibition of proteine in public as well as private practice, I entertain a very favourable opinion of it, as I have seen it successfully administered in very many cases that have fallen under my notice. Difficult cases of caries of the spine have been under my treatment, and have been cured by the exhibition of proteine.

Numerous other cases of caries have been successfully treated by the same remedy. Two cases of failure in the effect of this medicine have fallen under my notice. The one a man with caries of the bones of the knee-joint of long standing, with no constitutional derangement; all the means employed failed to produce anchylosis, and the administration of proteine produced no effect. The other case, a lady with extensive caries of the bones of the hip-joint of twenty-five years standing; this patient took proteine for some time with a beneficial effect, but it failed to produce a cure. I have prescribed it extensively with very beneficial results, and can recommend it as a medicinal agent and one calculated to produce a favourable termination in most cases of caries; also in some cases of scrofula, extensive ulcers, debility, diseases of the gums and teeth, rickets, undue lactation, and insufficient secretion of milk. In infancy, where debility exists, and where the functions are not duly carried on, and in some affections of the spine, five grains once or twice a day will be sufficient for a child, and ten or twelve grains for an adult; and I have ordered it to be taken as a powder, dry or upon bread and butter.*

In a case of disease of the hip-joint under my care, where the bones had become in a state of caries, and when the bowels were so torpid that they required the most active and brisk aperient medicine to produce any beneficial results, the exhibition of proteine was most successful, not only in relieving the hip, but also in restoring the natural action of the alimentary canal; for, after a few doses, a healthy and natural action of the intestines was the result, and this patient, up to the time of his quitting London, required no further aperient medicine. I could bring forward numerous cases of the efficacy of proteine, but I trust sufficient has been said upon this subject. In one or two instances I must mention that I have found its effect rather inflammatory, and, should this result, it ought to be discontinued, active aperients administered, and such other remedies as the case may require. I have tested its tonic qualities by administering it instead of quinine, wine, or beer, not in a solitary instance, but on several occasions; and where Nature has to restore the loss of any part, caused by extensive sloughing of the soft structure, I have found by its exhibition that the cases have rapidly improved and terminated favourably in a much shorter period than under the administration of other remedies.

Medical Times, April 22, 1848, *p.* 491.

173.—*Extraction of a Fish-Hook from the Œsophagus.*—Two children amused themselves by playing at angling, the younger taking the part of the fish. After several endeavours to catch the hook in his mouth, the poor child succeeded too well, and determining, it appeared, to play his part to perfection, swallowed the hook. The consequence was, that his brother drew the line, and fixed it at once in the œsophagus. All attempts to extract it proved futile, till the surgeon took a pistol bullet, and having pierced it, put it on the line, and allowed it to slip down to the impacted hook. The weight removed the latter, the point of which sticking into the lead, it was safely returned.—*Revue Medico-Chirurgicale*, Janv., 1848.

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* Prepared by Mr. Garden, operative chemist, Oxford-street.

Provincial Medical and Surgical Journal, May 3, 1848, *p.* 248.

174.—*On Partial Dislocation of the Fore-arm Backwards.*—By Dr. M. H. Stapleton, Surgeon to Jervis-street Hospital, Dublin.—[Dr. Stapleton observes that Sir A. Cooper does not mention partial dislocation of both bones of the fore-arm backwards; and that Boyer denies, in the following words, the possibility of such an accident:]

"Dislocation of the fore-arm backwards can never be incomplete. If the summit of the coronoid process of the ulna was not forced, by the effort which causes the displacement, beyond the transverse diameter of the articular pulley of the humerus, the latter, on account of the obliquity of its surfaces, would fall back into the sigmoid cavity of the ulna, when the effort at displacement had ceased. The coronoid process is drawn by a similar mechanism into the fossa of the humerus intended for the lodgment of the olecranon process, if it shall have advanced beyond the aforesaid point."

J. L. Petit was not so dogmatic. He admits the possibility of a partial dislocation. "When," says he, "the dislocation backwards is incomplete, and the anterior eminence of the ulna rests posteriorly upon the most prominent part of the pulley of the arm bone, then, under such circumstances, the flexors are less tense, the extensors are relaxed, and consequently the fore-arm is less flexed, than in complete luxation backwards."

Certain cases that have fallen under my notice must plead my excuse for differing with so high an authority as Boyer, and induce me to follow the opinions of Petit, which are in accordance with those of Monteggia and Leveillé, and which are moreover confirmed by the observations of Malgaigne, who declares that the incomplete or partial dislocation is by far a more frequent occurrence than the complete. The description given by him is, "that the coronoid process of the ulna lies upon the inferior part, and a little posteriorly to the pulley or trochlea of the humerus; the fore-arm is scarcely at a third of its flexure; the olecranon process is an inch and a half behind the epitrochlea, but upon a horizontal plane perceptibly inferior to it; whilst in the complete dislocation, the coronoid process of the ulna being lodged in the cavity usually occupied by the olecranon, the olecranon is found almost equally distant from the epitrochlea, and posterior to it, but upon a plane, and evidently superior to it."

[Dr. Stapleton gives first a case of incomplete dislocation of the ulna backwards, occurring in a boy six years old.]

The child supported his injured arm with his right hand: it was at about a third of its flexion; pronation and supination were perfect. Complete extension was impossible, nor could the limb be completely semiflexed, and when attempted, the boy screamed out that his little finger was hurt. He had no power over the elbow-joint. The only account we could elicit from him was, that he slipped and fell, with his hand under him. There was no deformity on the external side of the joint; the head of the radius could be felt to rotate in its normal position. On the inner and posterior part of the joint there was considerable deformity; the olecranon was thrown to the inner side, but on a plane inferior to the epitrochlea. On each side of the triceps there was an elastic swelling, but that on the exterior side was much the larger; the prominence in front was below the fold of the arm. There was scarcely any ecchymosis. Extension being made in the opposite direction, I pushed the olecranon forward with my thumb, and in about two minutes I suddenly bent the child's arm round my own, which acted as a fulcrum. The reduction was easily accomplished. The fore-arm could now be flexed to the fullest degree, and the child had the full command of the joint.

It was evident to all present that the radius was in its normal position in this case, and that the external condyle preserved its proper position with regard to the shaft of the humerus. The great pain in the little finger was produced by the tension of the nerve. It was not fracture of the internal condyle, as the fore-arm could not be bent to a right angle, nor the ulna made to resume its natural position. That there was a displacement backwards of the ulna cannot be disputed. Was it a complete or incomplete dislocation? I should say that it was incomplete, as the coronoid process was not thrown into the posterior fossa of the humerus.

[Next he gives two cases in which there was a similar displacement of both bones. In one of these, he tells us,]

The reduction of the dislocation was effected by an assistant passing his arm round that of the patient; extension of the fore-arm was then made by grasping the hand, and rotating it outwards; in about a minute, the head of the radius was seen to assume its proper position, and the fore-arm being suddenly bent, the olecranon immediately resumed its natural position. The fore-arm could now be flexed and extended, and also supinated and pronated.

[In conclusion, Dr. Stapleton repeats the important advice of Boyer:]

"If dislocation of the elbow be not quickly reduced, time is given to the soft parts to inflame, and it becomes quickly irreducible. It is rarely after a month or six weeks that reduction can be accomplished, and this is about the time that the inflammation and swelling ordinarily takes to subside. To what consequences, then, are we exposed, if we wait for the swelling and effusion to entirely subside, when any inflammation that may have been present was not to be dreaded beyond six or seven days. Nature can do but little towards the restoration of the powers of the joint. The fore-arm remains partly flexed, and the power of supination and pronation almost entirely lost."

Dublin Quarterly Journal, May 1848, *p.* 326.

175.—*On the Ventilation of Rooms.*—We have received the subjoined from Mr. Small, surgeon, Boston:—The following is a useful and economical plan of ventilating the upper part of rooms, and one which I have adopted with complete success. A hole of about two or three inches diameter is made through the wall into the chimney, and the thing is done. No ventilator is required, no smoke issues from the hole, (that is, it has not in the many cases that I have had the plan tried;) on the contrary, it will cure a smoky chimney; it does not much disfigure the wall; a picture hung diagonally will hide the orifice. Where there is a recess, the hole may be made laterally into the chimney. In case of a tendency to smoke, I would suggest that a piece of tin or sheet iron, of four inches square, with a hole of the required size in the centre, and a valve of cloth or leather tacked on at the back, be nailed or fastened on the wall with paper, seeing, of course, that the valve has free play. In the future building of houses, a round drain tile should be bricked into the chimney, at the top of the room. Unless the ventilating of rooms is easy of accomplishment, as well as economical, we can have no hope of its being generally adopted. The above-sized orifice I find to be quite sufficient in ordinary rooms. It answers equally well where there is or is not a fire.—*Journal of Public Health.*

[Arnott simplified, and usefully, if correct and practicable.]

Lancet, March 25, 1848, *p.* 343.

176.—*Rapid Mode of Procuring Vesication.*—Apply six drops of a mixture of one drachm of liq. ammoniæ fortissimus, and two drachms of olive oil, to the woollen side of Markwick's spongiopiline, and press this gently against the skin. In the course of ten minutes a perfect blister is formed.—*Pharm. Journ.*, Feb., 1847.

Provincial Medical and Surgical Journal, Jan. 12, 1848, *p.* 26.

177.—*New Caustic Holder.*—[Mr. T. J. Pettigrew, F.R.S., describes a useful caustic holder with ball and socket joint, by which the caustic can be turned in any direction.]

Lancet, Jan. 8, 1848, *p.* 53.

178.—*On Tincture of Acetate of Iron.*—By M. Donovan, Esq., M.R.I.A.—An excellent tincture of acetate of iron may be produced in a few minutes and without risk of failure, by the following process. Mix two drachms of red oxide of iron, prepared according to the Dublin Pharmacopœia, with half an ounce weight of sulphuric acid; and expose the paste to the heat of a spirit lamp for a few minutes; when it will suddenly solidify. Instantly remove the lamp; triturate the solid mass with nine drachms of acetate of potash, and add eight ounces of rectified spirit. The tincture is now complete; and without any digestion, will, by filtering, at once afford a transparent, beautiful, deep-crimson liquor, which in one drachm measure generally contains one grain of peroxide of iron.

This process is, as far as I know, unexceptionable, provided that the tincture is not to be kept longer than a few months; but it at length begins to deposit, and the decomposition will slowly proceed, no doubt to the full extent, although I have never had it on hand long enough to prove the fact. If the above quantity only be prepared at a time, it will not be impaired until, in the course of business, time enough will have elapsed for its consumption.

A much more permanent tincture, and which I have never known to change, may be produced in the following manner; but the method is a little more troublesome.

Take two ounces of precipitated carbonate of iron; and sixteen ounces by measure of commercial acetic acid of such strength that one part of it to seven of water will be equal to distilled vinegar.

Introduce them into a glass matrass, and when the slight effervescence is over, boil the mixture until the whole is reduced to twelve ounces; when cold, filter.

Expose the blood-red solution thus obtained in a broad, shallow dish for three days, then pour it into a glass vessel large enough to hold three or four times the volume of the liquid.

To this add fifteen drachms of common carbonate of potash (sal tartari) by degrees; so that the effervescence may not be unmanageable.

When the effervescence is over, add twenty-four ounces of rectified spirit, and filter.

This tincture will measure about thirty-two ounces, and will be of a fine deep red colour, and styptic agreeable taste.

The tincture thus produced will not deposit; at least I have had it on one occasion for eighteen months without the slightest deposition beyond what is necessary for its perfect clearing; in most cases, the filter allows a minutely divided, and at first insensible oxide of iron, to pass through it.

The theory of the process is obvious. The precipitated carbonate of iron, no matter how long exposed to the air in drying, always contains a quantity of protoxide of iron. The oxide will, therefore, when heated in acetic acid, afford protacetate and peracetate of iron. The former salt, although little soluble in rectified spirit, will dissolve, at least to a ceatain extent, in spirit so much diluted; but much of it would separate in some days, and form a coating on the sides and bottom of the containing vessel. To prevent this change, the acetic solution of iron is to be exposed to the air; the protacetate is thus converted into peracetate.

But this peracetate if simply dissolved in rectified spirit would afford a tincture from which the acid would soon be abstracted and acetic ether formed. To prevent this, and give to the tincture permanence, we must convert the peracetate into a triple salt, by the addition of potash, and then we accomplish what the pharmacopœial process contemplated, but failed to effect.

Dublin Medical Press, Dec. 1, 1847, p. 341.

179.—*On "Muriate of Opium."*—By Dr. J. G. Nichol, Crook, Durham.—During the last ten or twelve years I have made and prescribed a solution of opium, which I think is not mentioned in any work on materia medica with which I am acquainted. I use powdered Turkey opium and water, pretty strongly acidulated with muriatic acid. I have found, by experience, that this is the best anodyne I am acquainted with. I see by Dr. Pereira's Materia Medica, that mention is made of Dr. Porter's solution of opium in citric acid. I made and used the same sort of preparation ten years ago; but it did not answer. It caused a great deal of headache and other unpleasant symptoms; moreover it became muddy, and appeared to be decomposed; therefore, I gave up using it. I have called this preparation of mine "Muriate of Opium," but perhaps it is not a very correct name. I may mention that I prepared solutions of opium with acetic, nitric, sulphuric, citric, tartaric, and muriatic acids, and also prescribed them, but the muriatic solution was vastly superior to any one in every respect. All of them produced *headache*, with the exception of the *muriatic*. I prefer muriate of opium to the tincture, wine, or powder of opium, and also to the muriate and acetate of morphia; in fact, to any other preparation of opium. It never makes my head ache, but all the other preparations do.

My preparation is made according to the following formula:—

> Take of the best powdered opium, ℥j.; muriatic acid, ℥j.; distilled water, ℥xx. Mix.

Shake this mixture very frequently every day, during fourteen days, then strain and filter. The dose is from twenty to forty drops, according to circumstances. Many of my medical friends have tried this preparation, and they highly approve of it. *Pharm. Journal.*

Dublin Medical Press, Feb. 16, 1848, *p.* 104.

180.—*How to Make Decoction of Aloes.*—By R. W. Westall, Esq.—Mr. Westall states that, by preparing the compound decoction of aloes according to the following formula, several advantages are obtained, viz., that the article is of one uniform appearance, the rich colour is retained to the last, and the preparation is as good at the end of the twelve months as when first prepared:—

> Take of extract of liquorice, 14 drs.; carbonate of potash, 2 drs.; myrrh and aloes, of each, 3 drs.; water, 20 oz.

Boil these ingredients gently with the above quantity of water in a water bath down to thirteen ounces, pour this into a bottle, then add croci three drachms; tinct. cardamom. comp. fourteen ounces; macerate for ten days, then strain through linen. Mr. Westall keeps it in this state, and adds an equal quantity of distilled water when required for use.

Dublin Quarterly Journal, May. 1848, *p.* 543.

181.—*The Composition of Milk.*—Table shewing the composition of the milk in man, and in various animals.

	100 parts contain—		100 parts of the solid constituents contain,			
	Fluids.	Solids.	Casein.	Butter.	Sugar and Extractive Matters.	Salts.
In Man...	883.6	116.4	31.2	23.0	43.8	2.0
" the Cow	842.0	158.0	42.1	28.1	23.9	5.7
" Ass	907.0	93.0	18.0	13.2	68.5	
" Goat	865.0	134.0	41.1	28.0	30.0	
" Ewe	856.2	143.8	31.2	29.2	34.7	4.7

Medical Gazette, May 5, 1848, *p.* 752.

182.—*Coffee as a Disinfecting Agent.*—By F. Weber.—Coffee is one of the most powerful means not only of rendering animal and vegetable effluvia innocuous, but of actually destroying them. A room in which meat, in an advanced degree of decomposition, had been kept for some time, was instantly deprived of all smell on an open coffee roaster being carried through it, containing a pound of coffee newly roasted. In another room, exposed to the effluvium occasioned by the clearing out of a dung-pit, so that sulphuretted hydrogen and ammonia in great quantity could be chemically detected, the stench was completely removed within half a minute on the employment of three ounces of fresh-roasted coffee; whilst the other parts of the house were permanently cleared of the same smell by being simply traversed with the coffee roaster, although the cleansing of the dung-pit lasted for several hours longer. Even the smell of musk and castoreum, which cannot be overpowered by any other substance, is completely dispelled by the fumes of coffee; and the same applies to the odour of assafœtida. It was remarked, however, that in general animal effluvia are more readily affected by it than vegetable.

That here an actual neutralization, and not a mere envelopment of matter, takes place, is shown from this,—that the first fumes of the coffee are imperceptible, and continue so until a point of saturation, so to speak, is reached, whereupon the obnoxious smell disappears, and that of coffee predominates. The reverse happens with other aromatic vapours, and even with acetic acid and chlorine. Here both coexist until the one completely preponderates.

The simplest form in which to use it against contagious matter is in powder. The well-dried raw bean is to be pounded in a mortar, and to be strewed over a moderately-heated iron plate, until the powder assumes a dark-brown tint. Caffeic acid, and the empyreumatic coffee-oil, act more readily in very minute quantity.

Medical Gazette, Jan. 21, 1848, *p.* 129.

183.—*A New and Cheap Deodoriser.*—This deodoriser, discovered by Mr. Young, ot Manchester, who has not patented it, is a waste product from the manufacture of chlorine. It consists principally of a solution of chloride of manganese with a variable quantity of chloride of iron, and generally a little hydrochloric acid and free chlorine. It is produced in large quantities, one house throws away thirty-six tons of the solution daily, and the total quantity is believed to exceed 150 tons a day, not any of which is at present usefully employed. Experiments have been made, which have satisfied Mr. Young that this solution has in a high degree the property of preventing decomposition in organic matter; cesspools, and other places giving out the most offensive odour, have been immediately sweetened by it. The immediate effect of adding this substance to offensive matter is the conversion of the hydrosulphuret of ammonia, which is the most offensive of the gases of decomposition, into the sulphuret of manganese and muriate of ammonia, or, as it is often called, chloride of ammonia. The latter is a valuable manure, and the former, though of less value, is not injurious to vegetation. Manganese, like iron, possesses no acid metallic qualities, and is, like it, used by nature as a food for plants.—*Health of Towns Magazine.*

Lancet, Jan. 8, 1848, *p* 47.

184.—*Apparatus for Chlorine Fumigation.*—Mr. Smith describes in the Pharmaceutical Journal, an apparatus which he has invented for the above purpose. By the way, are there any facts to prove that chlorine is a really disinfecting agent?

"The evolution of chlorine, to be useful, must be *continuous* in its supply, and not in sufficient quantity to be injurious to health, or detrimental to the furniture of a house; to this end has been constructed the chlorine gas generator, an apparatus whereby chlorine gas is slowly and continuously evolved during a lengthened period.

"It consists of a jar divided into three parts: the lower portion to contain the salt and manganese; the centre part is made with an interior shallow ring, to hold the acid; and the top is merely a perforated lid, to allow the escape of the gas. The acid is slowly combined with the manganese by means of a few loose-spun cotton threads immersed in the acid, and hanging over the side of the interior ring or trough, the lower ends of the thread reaching beyond the bottom of the ring; by this arrangement they act as syphons by their capillary attraction.

"The charge requisite for an apparatus of this description, to act for twenty-four hours, and suitable for a ten roomed house, would be three ounces of black oxide of manganese in powder, mixed with eight ounces of common salt dried, and five ounces, by weight, of sulphuric acid, mixed with four fluid ounces of water."

Lancet, Jan. 29, 1848, *p.* 127.

185.—*On a New Preservative Fluid.*—By **Dr. Stapleton**, Surgeon to Jervis St. Hospital, Dublin.—Dr. Stapleton says that he has used this fluid for six years, and that it preserves pathological specimens without hardening them or changing their colour. He says,—]

The process I adopt is simply as follows:—In a quart of saturated solution of alum in water I dissolve half a drachm of nitre; in this fluid I immerse the recent preparation, which soon becomes decolourized, but the colour gradually returns within a few days, the period, however, varying in different preparations. When the colour is thus completely restored, I put up the preparation in a filtered saturated solution of alum.

Dublin Quarterly Journal, Feb. 1848, *p.* 280.

186.—ON THE USE OF CHLOROFORM AND ETHER.

[These agents continue to excite interest in the profession, and to be better understood. They are not used so indiscriminately as they were during the first few months of their introduction. We subjoin a few of the most important papers which have appeared since our last volume.

Mr. **Sibson**, of Nottingham, says:—]

The stages of the increasing influence of chloroform, ether, and alcohol, are:—

Cerebral excitement.

Cerebral derangement; staggering intoxication.

Cerebral sleep (sopor); pupils contracted; dreams; reflex functions of brain and spinal marrow still active.

Cerebral death (coma); reflex functions of medulla and spinal marrow still active.

Death of spinal marrow; cessation of respiration (heart's action still generally present).

Cessation of heart's action.

It is very important to be able to tell easily when the stage of safety, sopor, is about to merge into that of danger—coma. The action of the pupils is the key to this knowledge. Chloroformization ought not to be continued one instant after the pupils, previously contracted, have begun to dilate. If unconsciousness can be secured by sopor, the inhalation should not be carried on to produce coma.

If complete muscular relaxation be sought for, as in hernia to facilitate taxis, in dislocation to make reduction easy, and in tetanus, then it will be needful in general to urge the patient from sopor into coma, but as soon as the muscular relaxation is secured the inhalation should cease.

When chloroform or ether is employed in chorea, delirium tremens, or other affections, it should never be urged beyond sopor. In neuralgia it is not usually needful to produce unconsciousness. Whenever the pain disappears the inhalation ought to cease.

Dr. Snow has made this important observation, that the effects of chloroform and ether increase after the administration of it has ceased: this he calls the cumulative property of those vapours. This increase of effect he has observed to last for twenty seconds. Mr. Wakley, in his experiments, observed the same thing. I observed this effect the other day in a woman whose lip was extensively pared under the influence of chloroform. I gave up the employment during sopor, the pupils being still contracted; and in a few seconds coma supervened, the pupils being permanently dilated.

On this ground, Dr. Snow objects to rapid chloroformization. He conceives that the complete effect ought not to be gained in less than two minutes. I own I cannot see how a slow, but effective administration of the vapour, can lessen the danger arising from the still increasing effect after the administration has ceased. The longer the inhalation is continued, the greater the total amount of chloroform received into the system; and this chloroform, already circulating in the blood, will still, I conceive, under either circumstance of quick or slow inhalation, continue to produce an increased effect. Indeed, in the case in which I observed this action, the inhalation had been carried on with intermission some minutes. In another case, in which unconsciousness was produced quickly, the pupil, which had been dilated during one or two seconds, contracted immediately after the cessation of the inhalation.

I think, with my friend Mr. Fearn, that it is important to dilute the chloroform vapour largely with air during the first few inhalations, so as to avoid the sudden shock on the nerves of the lungs, and accustom them to its presence.

After the death in Newcastle, and after the alarming case at Guy's Hospital, related by Dr. Gull, in which respiration appeared to be suspended for some time, we must feel alive to the proper means for restoring animation, should it be suspended.

If natural respiration ceases, there is nothing for it but to establish immediately artificial respiration. Ammonia, cold water, bleeding, will be resorted to in vain.

We ought, then, whenever we administer chloroform, to be ready in case of need to perform artificial respiration: I have constructed a chloroform inhaler, which can be immediately so applied on the face, that, by breathing through the external opening, and pressing back the larynx, artificial respiration can be established. The basis of this inhaler is the mask that I invented for the inhalation of ether, which mask Dr. Snow employed in May last.

"This inhaler is made of copper, brass, or white metal. It has a border or face-piece of thin flexible lead lined with oiled skin, covering the nose and mouth, and from its ductility easily adapted to any face. The lower or inspiring valve, is constructed on the principle of Arnott's ventilators, having a counterpoise weight which keeps it shut, unless acted on by pressure from without. The upper, or expiring valve, is a plain metallic lid always closed unless acted on by pressure from within. The tube to which this valve is attached may be drawn out so as to expose an aperture for the admission of air when desired. To perform artificial respiration with this inhaler, draw out the expiratory tube: imbed the mask firmly on the face,—press back the larynx against the œsophagus and spine,—inspire deeply, and distend the chest by blowing through the upper tube. Renew the artificial respirations in rhythmical succession, about sixteen in each minute.

As the action of the heart usually continues after the respiration has ceased, artificial respiration will generally restore animation.

It is possible that the cessation of the heart's action, and of respiration, may be simultaneous, owing to the distention of the right cavities of the heart. In such a case, in addition to artificial respiration, the abstraction of two or three ounces of blood from the jugular may relieve the distension of the heart, and permit the renewal of its action.

Medical Gazette, Feb. 18, 1848, *p.* 267.

[Mr. Wakley, Surgeon to the Royal Free Hospital, has made an extensive series of experiments with ether and chloroform, aided by Mr. Erasmus Wilson, and by Mr. Bullock, who supplied the drugs. The animals submitted to experiment were dogs, cats, rabbits, rats, mice, guinea-pigs, hedge-hogs, pigs, ruminant and solid-ungulate animals and birds. The reader must refer to these interesting experiments for minute information. There is one very important practical conclusion which Mr. Wakley draws from these cases, viz., " That when there exists any disease of the heart, any aneurism near the heart, any threatening dyspnœa, or any tendency to an engorgement of the lungs, it would be highly imprudent to recommend the inhalation of the vapour of chloroform, or of ether; but that in any of the abnormal conditions here described, should the practitioner determine upon employing one of the two agents in question, assuredly the more dangerous of the two would be found in the vapour of chloroform."]

Lancet, Jan. 1, 1848.

[Dr. Snow considers that the five stages into which he divided the process of etherization (Retrospect, Vol. XVI., p. 408), apply also to the effects of chloroform. As to the comparative merits of these two agents, he says:]

Chloroform has certainly the advantage over ether of being less pungent, and of being, therefore, more readily inhaled. It has also one or two advantages not named by Dr. Simpson; it occupies less space, and therefore excludes less of the air that the patient breathes, as I stated in November. It has another advantage, in not exciting a profuse flow of saliva, as ether sometimes does, which is very troublesome; and when the patient is on his back, as is the case usually in important operations, the saliva, coming in contact with the glottis, causes coughing at a time when the patient would not cough from the pungency of the vapour. But some of the properties of chloroform which Dr. Simpson calls advantages as compared to ether I do not appreciate altogether as such. One is its greater rapidity of action. Ether required four or five minutes on an average to produce the full chirurgical degree of its effects on the adult. Now it might be desirable to shorten this time to a certain extent, but not, in my opinion, to less than two minutes, not only to give ample time to observe its effects, but also on account of a property in the action of this class of vapours, which has not, that I am aware, been alluded to; I mean, the cumulative property they have. They act, it is true, with great rapidity, yet, to become imbibed by the blood, to pass through the heart, and reach the nervous centres, must occupy a little time, and I have often observed the insensibility to increase for twenty seconds after the inhalation has been left off. I have experienced this cumulative property myself to extend to twenty seconds, by taking a few inspirations of vapour, leaving off, and looking at a watch: consequently, I like to have about six times this period, or two minutes, for producing complete insensibility; but when administered in the way Dr. Simpson recommends, chloroform often produces its full effects in much less time than this. He himself observes that he has seen a strong person rendered completely insensible by six or seven inspirations of thirty drops of it. Danger, it is true, may probably be avoided by putting a limited quantity on the sponge or handkerchief, but then the full effect might not be reached, especially as it cannot be determined how much the patient inhales of what is put on, and the dose would have to be repeated, so that this plan is not very applicable in surgery; and Dr. Simpson himself recommends that "one or two teaspoonfuls of the chloroform should be at once placed upon the hollow of a handkerchief, and immediately held to the face of the patient." He adds that "generally a snoring sleep speedily supervenes."

What he is pleased to call a snoring sleep I should denominate the fourth degree of narcotism, which is separated only by one degree more from a total cessation of respiration. I do not consider that snoring, or even some degree of stertor, is alarming or injurious, but I think it advisable not to induce this state with such great rapidity, lest the narcotism should proceed a degree further on account of the cumulative property of the vapour after it is discontinued. Let us look at this matter in another point of view. 100 cubic inches of the vapour of chloroform contain 128 grains of the liquid. Half of this quantity is enough, if inhaled within a minute or two, to produce the most complete insensibility; the whole quantity, if inhaled rapidly, might undoubtedly cause death; for I have observed that animals may generally be killed by half as much more vapour than will produce narcotism to the fourth degree. If, for instance, an animal is rendered completely powerless in two minutes by vapour of a certain kind and strength, death takes place by continuing it for another minute; if rendered powerless in one minute, then it dies in about half a minute more. Now 100 cubic inches of vapour of chloroform may be contained in 800 or even in

500 cubic inches of air. When air is saturated with the vapour of chloroform at 60°, 800 cubic inches contain 100 of vapour; at 70°, 500 cubic inches contain the same quantity; so that the 128 grains of chloroform might all be inhaled in four or five deep inspirations, and, consequently, a person breathing deeply might inhale a fatal dose of chloroform in a quarter of a minute. This should be borne in mind, especially by those who recommend that patients should breathe deeply when inhaling. I always tell persons to breathe quietly, and when I find, during the inhalation of chloroform, that the inspirations are deep, I open the valve for admitting the external air to further dilute the vapour. I seldom induce total insensibility in less than two minutes, and occasionally take three minutes. The exhibition of the chloroform requires great care when it has to be repeated to keep up insensibility in a patient already under its influence, during an operation; and under all circumstances, it will require additional care in summer, except an apparatus with a cold water bath is used.

I consider that on the whole, chloroform is superior to ether for adults, and that we are greatly indebted to Dr. Simpson for the introduction of its use. For children I prefer ether to chloroform, when the choice is left to me, on account of the greater rapidity of of action of these vapours on them, as I stated to the Society a month ago, although I have administered chloroform several times to young children,—one of them aged only ten months—and with perfect ease, safety, and success. I consider the less powerful agent of the two, however, sufficiently strong for very young patients, and my chloroform inhaler serves very well with the small face-piece for exhibiting it to them.

Children are brought under the influence of ether, sufficiently for an operation, in two minutes, and I think it impossible for the imagination to conceive any anæsthetic agent more mild and efficient than ether is in its effects on children—a less degree of narcotism than in the adult producing an immunity from pain, and the liability to excitement being absent. The ether, however, requires to be given to them with an apparatus, by which the vapour can be introduced into the air they are breathing, in the most gradual way; otherwise the pungency of the vapour, when suddenly admitted, makes them hold their breath, which is the case with chloroform also when given to children on a sponge or handkerchief. If it is desirable, as I believe it to be, that we should have an agent which can be safely and generally administered in this way to children, to women in natural labour, and for tooth-drawing, and minor operations, by persons of no special experience in the matter, it should be something much less powerful than chloroform, and less pungent than either of these vapours.

[Dr. Snow thinks that the conclusions drawn by Mr. T. Wakley from his experiments are not correct. Because congestion of the heart and lungs is found after death, it by no means follows that the condition exists during inhalation. The congestion found after death, Dr. Snow says,] Arises from the circumstance, that in many instances in which animals are destroyed by these vapours the respiration ceases, whilst the circulation is still vigorous; they die, in fact, as if by asphyxia; and it is on this account that, to avoid danger, in exhibiting vapours, we should attend to the state of the respiration rather than the pulse.

[We cannot, however, see how this circumstance disproves the opinion of Mr. Wakley, that in all cases of aneurism near the heart, in threatened dyspnœa, and engorgement of the lungs, chloroform would be injurious; on the contrary, we think Mr. Wakley's opinion is strongly confirmed, even by Dr. Snow.]

Lancet, Feb. 12, 1848, *p*. 177.

[Mr. Lansdown, Surgeon to the Bristol General Hospital, gives us his experience as follows:]

In the case of strangulated hernia, an old lady of seventy-two was completely insensible in half a minute, when the tumour which before had been exceedingly tense, became perfectly soft, and the slightest pressure returned it immediately. Another patient in delirium had taken six grains of opium, divided into three doses, in the course of twelve hours. Two of these doses I had myself given, therefore I know they had been duly administered. Seven hours after the last dose had been taken, no sleep having been procured, I covered his nose and mouth with a cloth, upon which I had thrown forty-five drops: in half a minute he was asleep. Quiet having been once obtained the opium took effect, and he slept for four hours, awaking perfectly quiet and rational; and now, four days since he took it, he is quite well, and has required no medicine.

The use of ether having been superseded, it would appear now to be almost useless to mention those cases which have occurred in our practice; but as the chloroform is a very similar agent, it may not be amiss to mention some in which I have used it, and the extent to which I have at times carried it amongst my obstetric patients. My practice being of a mixed character, and not paying more attention to midwifery than to the surgical department, I cannot be expected to have used it so frequently in that kind of practice as others who have paid exclusive attention to that branch of the profession. Upon one occasion of a labour, I went on imperceptibly hour after hour, not thinking how time was passing, until my patient had been inhaling the ether for eleven hours and a half, at intervals of about five minutes apart, and had consumed about fourteen fluid ounces of ether. Not a bad symptom followed; there was neither headache nor anything else unpleasant; but she was the next day very well, having herself being spared the knowledge, and her system the shock, of what would otherwise have been a very painful and tedious labour of twenty-eight hours' duration. Having mentioned this one, the others in which I have given the ether three or four hours and upwards, which I have done in several instances, must sink into the shade. I have never had occasion to regret using the ether in my midwifery practice, which I have done thirty times. The patients also are themselves much pleased with it, and they have much more rapid recoveries than is usual upon ordinary occasions. I find the uterus sending out the placenta immediately after the expulsion of the child, and there has scarcely been any hemorrhage following. Since I commenced practice in 1828, I have seldom gone to a labour without my tincture of ergot in my pocket: not with the intention of using it during the labour,—a mode of practice, which when employed indiscriminately, by way of hurrying the labour, cannot, I think, be too much condemned,—but for the purpose of suppressing hemorrhage after the expulsion of the placenta, should such occur. I have now quite forsaken my little bottle for the ether, which in its turn must make way for the chloroform. But the state of the perinæum is a thing which has forcibly struck me while using the ether; that has invariably relaxed before the head has come to bear upon it, thereby not requiring the pressure of the head to force it open and to lacerate it, as was frequently the case when left to itself in the old mode of practice. This advantageous quality I have not observed, while using the chloroform, the parts under its use continuing unaffected by it; neither have I ever found the action of the uterus, when in a sluggish state, induced by the chloroform as it is by the ether.

In the case of strangulated hernia, in which I used the ether, the result was similar to that I have before mentioned while speaking of the chloroform. The ether was much longer in producing its effect, the man being unwilling to inhale; therefore in such cases the chloroform is to be preferred, for the reason, that should the inhalation be opposed, the effect is so much more readily produced, that the patient becomes narcotic before he is aware of it I have also freely given the ether in a case of tetanus, accompanied by trismus, which has lasted three weeks: the only thing by which the mouth could be opened was the inhalation of ether. The poor fellow has struggled through it thus far, and the trismus has now nearly left him. I hope to report this case at length in the Lancet, when I shall have time to do so. Dr. Protheroe Smith, in the perusal of whose letters I have felt much interested, in his paper on chloroform, inserted in the Lancet of November 27th, has so worded his last paragraph but one, that it may by many be understood that he was the first who recorded in the pages of the Lancet his experience of the use of ether in obstetric cases in England. If I am so to read it, I must beg to correct him. I am quite aware that his was the first case in which it was used in England; but mine following immediately after, was recorded in the Lancet of April 24th, one week previous to Dr. P. Smith's announcement; and if there is any honor in being the first to have used it in natural labours in England, I may claim that and its publication also, as my first case of natural labour took place on April 7th—Dr. Smith's, April 27th.

Lancet, Jan. 1, 1848, *p.* 11.

[From the following case, we see the good effects of ether inhalation *even in a state of great collapse.* It is that of a man under the care of THOS. WAKLEY, Esq,, with fungus hæmatodes of the arm, who was so exhausted by repeated hemorrhages, that he was considered moribund. (The brachial artery had previously been tied, on the supposition that the case was one of diffused aneurism.) The case is thus reported:]

14th.—Has rallied to some extent. In the afternoon he confessed to his priest and took leave of his children, as though certain of death. But after "confession" he expressed a wish to have the operation performed. Although the case appeared to be utterly hopeless, Mr. Wakley immediately consented to operate, and stated that he should administer the ether, as, from what he had witnessed of its sustaining power in some other instances of extreme debility, he expected benefit from it, in addition to protecting the patient from the shock of the operation. The ether having been inhaled for about a minute, Mr. Wakley amputated the arm. He preferred the flap operation, as it enabled him to cut below the point where the brachial artery had been previously tied. By adopting this precaution, he hoped to limit the loss of blood to a very small quantity. Although there were several small arteries which required ligatures, not two ounces of blood were lost in the operation. The patient did not feel pain until after the operation and dressings had been quite completed. Having taken, at intervals, some brandy, ammonia, and opium, he passed the evening and night quietly, and obtained some sleep.

15th.—Very slight oozing of blood; quite relieved from all pain; pulse 96, rather hard and small, tongue dry and red; took an egg and some tea this morning. To have beef-tea and fish for dinner.

16th.—Slept well last night without an opiate; is cheerful and takes nourishment well; pulse is now soft, 96.

[He continued to improve, and was discharged quite well in a few weeks.]

Lancet, Dec. 18*th*, 1847, *p*. 649.

[Mr. CURLING, in his Address delivered before the Hunterian Society, remarks:]

There are certain cases in which I am disposed to think that a preference is to be given to ether. Chloroform has a greater tendency to produce involuntary muscular contraction, and exerts also a more direct and a more powerful influence on the heart than ether. In those cases, therefore, in which we desire chiefly to obtain muscular relaxation, and in persons whose powers are much depressed, it may be advisable to employ ether. Ether is, perhaps, better suited also for those cases in which we desire to prolong the insensibility to pain, as its influence is less transient than chloroform, and more readily rendered persistent. A mixture of the two has been employed in Vienna, and this plan has been tried with advantage by Mr. Curling.

Anæsthetic substances, besides being useful in diminishing the shock of operations and subsequent reaction, operate beneficially by rendering the after exhibition of opiates unnecessary; and, further, according to Mr. Curling's experience, "the constitutional symptoms have been milder, and the cases have proceeded more satisfactorily than after operations in which no means have been taken to prevent pain." He deems a further advantage to accrue from the less need of rapidity in operating; from an opportunity being given of acting with greater deliberation and exposure; and from the composure of the patient. In children these several advantages of anæsthetic agents become still more prominent.

There is a condition in which the surgeon would naturally be extremely cautious in giving anæsthetic remedies, until experience had fully proved that they might be safely employed. This condition is, shock from an injury.

Where this state is excessive, and sensibility is consequently annihilated, a prudent surgeon would not venture to give chloroform; nor would it be needed. But when patients "have recovered from the first effects of the shock, and though the heart acts feebly, there is sufficient power to admit, if necessary, of operative proceedings; in such cases anæsthetic remedies usually exert a beneficial effect;" acting as stimulants; saving the hurtful effects of a second shock; inducing a healthy reaction; and altogether placing the patient in a more favourable state for recovery than where such means have not been resorted to. Lastly, where operations are needed in persons reduced by previous illness or exhausting discharges, anæsthetic agents have helped to support the patient during the operation, and had an exhilarating effect upon the powers of life afterwards. But in such cases it must be borne in mind that their effects are readily and quickly developed; and caution must be observed, so as not to produce too powerful an effect.

Lancet, April 8, 1848, *p.* 391.

[Various forms of instruments for inhalation have been recommended by different practitioners. For example:

Dr. CORNWALL exhibited to the Edinburgh Obstetric Society, a chloroform inhaler of his invention.]

It is a tin box which contains a phial of chloroform marked in drachms. At the bottom of the box are three layers of flannel, over which is a piece of perforated zinc. In using it, a drachm of the chloroform is poured in, and it is then applied over the mouth and nose of the patient; the edge being of a shape to fit closely to the cheeks, the requisite supply of air comes through an opening at the upper part of the box. In obstetric cases, where it is wished to keep up the soporific effect for some hours, or during surgical operations where there are few assistants, this inhaler can easily be retained in its place by means of a tape attached to the small rings at the ends of it, and, when so applied, any additional quantity of chloroform required can be put in by means of a filler.

Dr. Cornwall stated that, in the hands of those expert in the use of this anæsthetic agent, a towel, or handkerchief, or sponge, could no doubt be made to do well; but it required both care and practice to arrive at proficiency in this, whereas, with his inhaler, he considered it almost impossible for any one to go wrong. He viewed the vapour of chloroform as a fluid—it being, in fact, much heavier than atmospheric air—and his inhaler as a drinking cup, which supplied each inspiration not only of the mouth, but of the nostrils also. In this way, and from the extensive evaporating surface, the full narcotic effect is at once induced; and this is of very great importance, preventing the awkward and injurious tendency of its exciting and sickening action. Dr. Cornwall considered the snoring, so commonly induced, indicative of the state of insensibility to pain, and, therefore, of the proper time to commence operations. He advised, however, that, while deep snoring lasted, the supply of the vapour should be reduced by holding the inhaler at a little distance from the surface. He was of opinion, that more attention should be paid to the effect produced on the pulse and features than to the quantity of chloroform given. At the same time, with a narcotic so powerful, he thought it right always to measure the dose put into the inhaler.

The advantages of this inhaler are, efficiency and safety; it effects a very considerable saving of chloroform, and thoroughly prevents the contact of the fluid with the lips or face, and the dripping of it on the dress. Its portability also may be mentioned. It is carried conveniently in the pocket, and, as to its cost, it can be had for 3s. 6d. Dr. C. found that rest in the recumbent position, quietness, and an empty stomach, are circumstances favourable to the chloroform taking proper effect speedily.

[Dr. SIMPSON, though approving of Dr. Cornwall's inhaler, objected to the practice of *tying* it, or any other, upon the face of the patient, since too large a dose might thus be exhibited. He said that:]

In using the handkerchief even, he never applied it quite close to the face of the patient, but always allowed a sufficiently free access of air. As to the quantity of chloroform to be used, Dr. S. judged entirely by the effect on the patient. He believed that, in surgery, the symptom most to be relied upon as indicating a thoroughly anæsthetic state, was slowness of respiration, or a degree of snoring, or stertorous breathing. After the appearance of this symptom, it is only needful to continue the inhalation, from time to time, by intermissions; and, by repeated applications of the handkerchief, the patient ought to be kept in the same sopor during the whole of the operation. In midwifery, Dr. S. believed that this deep degree of anæsthesia was, in ordinary circumstances, not required. He had found that, when administered so as to cause stertorous breathing, the uterine contractions generally ceased, and did not return till the effect had, in some degree, passed off. He had found, therefore, that the chloroform given in a surgical dose was very useful whenever he wished to stop the uterine contractions, as in cases where turning was necessary, and many other obstetric operations. In cases of natural labour, he generally began with a large dose of chloroform, so as to bring the woman at once completely under its influence. This mode of proceeding prevents the chance of any excitement; and, although it occasionally may stop the pains for a few minutes, especially if the labour is still in an early stage, yet the contractions recur as soon as the deeper state wears off, which it usually does in two or three minutes. The depth of the sopor is allowed to diminish by merely withholding the handkerchief till a pain comes on; and then the anæsthetic state is kept up by its reapplication, for two or three inspirations every four or five minutes; or what is better, with each succeeding pain The patient should be kept unconscious, but not deeply so, till the head was passing the vulva, when a deeper anæsthesia was required.

Monthly Journal, April, 1848 *p.* 762.

Mr. Robinson, the able dentist, of Gower-street, has invented a remarkably ingenious instrument for administering the vapour of chloroform. The mouth-piece is constructed of leather, lined with tinfoil and lead: thus it is easily fashioned into any form, so as to fit the peculiarities of structure to which it may be applied. Being inelastic, it retains the shape into which it is fashioned. The other portions of the instrument consist of a small piece of metal network, behind which a little piece of sponge is hooked; and in front of it there is an opening, with a valve, for the admission of atmospheric air, which must pass through the sponge containing the chloroform before it can be inhaled. Another opening, having a valve, so as to admit of the escape of the expired air, is placed at the top of the instrument.

This excellent little apparatus, occupying only two or three square inches of space, acts most perfectly, and it has been repeatedly used, with complete success, at the Royal Free Hospital, King's College Hospital, and other public institutions in the metropolis.

Lancet, Dec. 18, 1848, *p.* 655.

[Mr. Erasmus Wilson also has invented an instrument for the administration of either chloroform or ether. He says:]

The instrument consists of a dome-shaped mask, which encloses the nose and mouth, and of a cylinder, about two inches long, by one inch and half in diameter, which projects from its front. The mask fits accurately to the surface of the face, accommodating itself to all irregularities of form, by means of a rim of flexible metal, nicely padded, and admitting of an adjustment that completely prevents the admission of air between the instrument and skin. During inspiration, therefore, the air passes through the cylinder, while in expiration it escapes through a circular opening in the upper part of the mask, this aperture being provided with a valve of the most simple but effectual kind, composed of vulcanised caoutchouc. The cylinder is furnished with three metal plates, pierced with small openings; one of these plates is placed at the mask end of the cylinder; another at the distance of three-quarters of an inch from the first and the third, which forms part of a moveable cap at its distal end. The space or compartment between the first and second pierced plates is furnished with two check plates, which prevent the chloroform or ether from dropping on the face of the patient, in whatever position the instrument may be held, while the space between the two outer pierced plates is the chamber for the reception of the sponge saturated with its fluid. The cylinder is, moreover, furnished with a moveable cap, which admits of the addition of fresh chloroform or ether to the sponge whenever it may be required.

In the form above described, the instrument is only fitted for the exhibition of chloroform; but by means of a modification, added by Mr. Coxeter, at my suggestion, a more extensive application of the apparatus is obtained. This modification consists, first, in a greater depth of the sponge-chamber, so as to admit a larger charge of fluid, and a larger evaporating surface—the quantity of ether required to produce anæsthesia being so much greater than that of chloroform; secondly, in the contrivance of an aperture in this chamber for the addition of chloroform or ether, without the removal of the cap of the cylinder, and without withdrawing the apparatus from the face of the patient; and thirdly, the conversion of the cap of the cylinder into a chamber capable of containing hot water.

The importance of the latter addition will be immediately recognised by all those who have had much experience in the use of the anæsthetic agents. Heat gives the small instrument the advantages of the larger apparatus in the exhibition of ether; and heat, while it economizes the quantity of chloroform, ensures its more speedy operation. During the late cold weather, I had frequent occasion to observe that the inhalation of chloroform required to be maintained for an unusually long time, although the operator took care to envelope the instrument with the palm of his hand. Mr. Thomas Wakley lately made to me a similar remark; and Mr. Bullock informs me that several gentlemen had complained to him of the inefficiency of chloroform—such inefficiency being wholly referrible to the cold state of the atmosphere.

Lancet, Feb. 5, 1848, *p.* 154.

M. Guersant, *fils*, in disarticulating the middle finger of a man suffering from caries of the digital bones, used the following method for the inhalation of the ether. A small dish containing about two ounces of ether was placed under the chin of the patient, and the head and face enveloped by a towel. Two minutes and a quarter of inhalation with this apparatus sufficed for the production of insensibility to pain, and the operation was then performed without the knowledge of the patient.—*Journal de Médicine et de Chirurgie*, August 1847.

Monthly Journal, Nov., 1847, *p.* 365.

[Dr. Clay thinks that the chloroform made in Edinburgh is to be preferred to that manufactured in England. He says,]

The chloroform of Edinburgh most undoubtedly differs much from that generally employed in England; for which difference several weighty reasons can be assigned. First, the price of the spirit from which it is manufactured in England, will always oppose the production of a good preparation, except at an enormous price: and this has occasioned the application of inferior preparations, and accounts for the frequent failures. In many instances no effect has been produced; in others, a long and harassing exhibition has been required; and in others symptoms of an alarming character have ensued. We must confess our surprise at the difference of the preparation, which is immediately detected both by the taste and smell: and we state our firm conviction, that in all exhibitions of this agent, it is advisable to use an Edinburgh production in preference to the English, as in the former place, the original cost of the material, allows the manufacture of good chloroform at a reasonable price.

British Record, March 15, 1848, *p.* 29.

[It is proposed to substitute for chloroform, *Aldehyde*, which, according to the Giessen nomenclature,]

Is the hydrate of oxide of acetyle, and its formula is $C_4 H_4 O_2$ or $C_4 H_3 O + aq$. It differs from alcohol in containing more carbon and less hydrogen. It derives its name from the last peculiarity (*Al*cohol *dehyd*rogenated.)

[The discoverer is M. Poggiale, Professor of Chemistry at the Val de Grace.]

At the meeting of the 13th March he stated that the respiration of the vapour of aldehyde was speedily followed by the most complete insensibility. Its stupefying action he found to be more rapid and more powerful than that of ether and chloroform. So far as we can ascertain, however, his experiments have as yet been confined to dogs, and in these animals he found that the state of insensibility was perfectly induced in forty-five seconds. The eyes became fixed, the muscles completely relaxed, and the pupils dilated and motionless. This state lasted three minutes, at the end of which time the animal, though still insensible, rolled about, and experienced some involuntary movements. After eight minutes respiration was performed in a natural way, and the sensibility of the skin returned. No accident followed the inhalation. In two experiments the respiration of the vapour was continued for *ten* minutes: the animal remained insensible and motionless, the muscles of respiration alone continuing to act. When exposed to a free current of air, the head of the animal was drawn backwards: respiration became convulsive, but afterwards regular: finally, the dog raised itself upon its fore-legs, and drew after it its abdominal members, which were paralysed. It entirely recovered in about a quarter of an hour. It was observed that the arterial blood had the strong and peculiar odour of aldehyde.

M. Poggaile remarks, that, if the powerful odour of aldehyde is not found to be an obstacle to its employment in surgery, this liquid will be a very economical substitute for chloroform. Large quantities of it may be prepared at a very small cost, by the distillation of a mixture of alcohol and black oxide of manganese with diluted sulphuric acid, and subsequent rectification of the product by chloride of calcium.

On reference to Dr. Simpson's paper, we do not find that aldehyde is mentioned as having been employed by him. It is impossible to speculate on the probable effects of its vapour on man, from its composition. No one could have supposed *à priori* that a vapour like that of chloroform, containing 69 per cent. of chlorine, could have been breathed with the comparative impunity which has been witnessed. Aldehyde may turn out to be, as M. Poggiale asserts, not only a more powerful, but probably a more manageable, narcotic than ether or chloroform. It should, however, have something more in its favour than mere cheapness, in order to justify its substitution for either of these agents in surgical operations.

Medical Gazette, March 24, 1848, *p*. 509.

On Chloroform in Midwifery.—[The most numerous papers on the subject of chloroform have been those referring to its use in obstetric medicine. The following cases and remarks by Dr. SIMPSON are interesting.]

Case 1 was a second labour, occurring a fortnight before the full time. Three hours and a half after the pains began, and when the os uteri was becoming well expanded, the inhalation of chloroform was commenced, and she immediately fell under its influence. Its action was kept up till the child was born, twenty-five minutes afterwards. She did not awake till after the placenta was removed, and then spoke of having "enjoyed a very comfortable sleep." She was not in any degree aware that the child was born; and when, in a few minutes, it was brought in from an adjoining room by the nurse, it was a matter of no small difficulty to persuade the astonished and delighted mother that the child presented to her was really her own infant. In her first confinement she had been three days in labour, and the infant had at last been removed by craniotomy.

Case 2.—Seen with Mr. Carmichael; a second labour: she began the chloroform inhalation before the dilatation of the os uteri was entirely completed; the child was expelled in fifty minutes afterwards. I kept her under the chloroform for a quarter of an hour, till the placenta was removed, the binder applied, and the body and bed-clothes were arranged and adjusted. On awaking, she declared that she had been sleeping refreshingly; she was quite unaware that the child was born, till she suddenly heard it squalling at its first toilet in the next room. An hour afterwards, she declared she felt perfectly unfatigued, and not as if she had borne a child at all. In her first or preceding confinement she had been in severe labour for twenty hours, followed by flooding. No hemorrhage on the present occasion.

Case 3.—Patient unmarried; a first labour; twins; the first child presented by the pelvis, the second with the hand and head. The chloroform was exhibited when the os uteri was nearly fully dilated; the passages speedily became greatly relaxed, (as has happened in other cases placed under its full influence,) and in a few pains the first child was born, assisted by traction. I broke the membranes of the second, pushed up the hand, and secured the more complete presentation of the head; three pains expelled the child. The mother was then bound up, her clothes were changed, and she was lifted into another bed; during all this time she slept soundly on, and for a full hour afterwards, the chloroform acting in this as in other cases of its prolonged employment, as a soporific. The patient recollected nothing from the time of the first inhalations, and was greatly distressed when not one but two living children were brought in by the nurse to her. Dr. Christison, who was anxious to observe the effect of the chloroform upon the uterus, went along with me to this patient.

Case 4.—Primipara; of full habit; when the first examination was made, the passages were rigid, and the os uteri difficult to reach. Between six and seven hours after labour began, the patient, who was complaining much, was apathized with the chloroform. In about two hours afterwards the os uteri was fully dilated, and in four hours and a half after the inhalation was begun, a large child was expelled. The placenta was removed, and the patient bound up and dressed before she was allowed to awake. This patient required an unusual quantity of chloroform, and Dr. Williamson, who remained beside her, states to me, in his notes of the case, "the handkerchief was moistened often, in order to keep up the soporific effect. On one occasion, I allowed her to emerge from this state for a short time, but on the accession of the first pain, she called out so loudly for the chloroform that it was necessary to pacify her by giving her some immediately. In all, four ounces of chloroform were used." Like the others, she was quite unconscious of what had gone on during her soporized state, and awoke altogether unaware that her child was born.

Case 5.—Second labour. This patient, after being some hours in labour, was brought to the Maternity Hospital. I saw her some time afterwards, and found the first stage protracted by the right side of the cervix uteri being thick, œdematous, and undilatable. The inhalation of chloroform was begun, and the first stage was terminated in about a couple of hours. Two or three strong pains drove the child through the pelvic canal, and completed the second stage. Fifteen minutes in all elapsed from the termination of the first to the termination of the third stage, or the expulsion of the placenta. The patient was dressed, and moved into a dry bed, where she slept on for a short time without being conscious of her delivery.

Case 6.—Second labour. The patient—a person of small form and delicate constitution—bore her first child prematurely at the seventh month. After being six hours in labour, the os uteri was fully expanded, and the head well down in the pelvic cavity. For two hours subsequently it remained fixed in nearly the same position, and scarcely, if at all, advanced, although the pains were very distressing, and the patient becoming faint and exhausted. She entertained some mistaken religious feelings against ether or chloroform, which had made her object to the earlier use of the latter; but I now placed her under its influence. She lay, as usual, like a person soundly asleep under it, and I was now able, without any suffering on her part, to increase the intensity and force of each recurring pain, by exciting the uterus and abdominal muscles through pressure on the lower part of the vagina and perinæum. The child was expelled in about fifteen minutes after the inhalation was commenced. In a few minutes she awoke to ask if it was really possible that her child had been born, and was overjoyed to be told that it was so. I have the conviction, that in this case the forceps would in all probability have been ultimately required, provided I had not been able to have interfered in the way mentioned. I might, it is true, have followed the same proceeding, though the patient was not in an anæsthetic state; but I could not have done so without inflicting great agony upon her.

Case 7.—A third labour; the patient had been twice before confined of dead premature children; once of twins, under the care of Mr. Stone, of London; the second time of a single child under my charge. The liquor amnii began to escape about one o'clock, A.M., but without pains for some time. I saw her between three and four o'clock, with the pains commencing and the os uteri beginning to dilate. In two hours afterwards, the third stage was well advanced, and the pains becoming very severe, she had the chloroform exhibited to her, and slept soundly under its influence. In twenty minutes the child was born and cried very loudly without rousing the mother. In about twelve or fifteen minutes more she awoke as the application of the binder was going on, and immediately demanded if her child was really born and alive, as she thought she had some recollection of hearing the nurse say so. She was rejoiced beyond measure on her son being brought in and presented to her.

The cases which I have above detailed were all cases of natural labour, and required no special artificial assistance. In none of them did the inhalation of the chloroform do harm of any kind to either mother or child—while it saved much maternal suffering and human pain. No woman could possibly make better recoveries than they have done and are doing—and no children could look healthier and more viable. I shall now state some operative and instrumental cases of labour in which I have used the inhalation of chloroform.

Case 8.—Fourth labour; the mother deformed, and the conjugate diameter of the brim of the pelvis contracted from the projection inwards and forwards of the promontory of the sacrum. Her first child was delivered by embryulcia; the second, by the long forceps; the third was small, and passed without artificial assistance. On the present occasion, after suffering slight pains during the whole night, labour set in with greater severity towards morning. After being in strong labour for some hours, she was seen first by Mr. Figg, and afterwards by Dr. Peddie, her ordinary medical attendant. I was called to see her about four o'clock, p.m. The pains were enormously powerful and straining, imparting to the mind the dread of the uterus rupturing under their influence; but the head of the child was still altogether above the brim, and only an œdematous ridge of the scalp passed through the superior and contracted pelvic opening. The passages had become heated, the mother's pulse raised, &c., and Dr. Peddie had tried two different pairs of long forceps. After I arrived, he applied, with great skill, another pair of long forceps which I had with me, but it was found impossible to move the head in the least degree forwards. The urgency and power of the uterine contractions, the immobility of the head upon the brim of a deformed pelvis, and the state of the patient and of the parts, all showed the necessity of relief being obtained by artificial delivery. In her first labour, I had assisted Dr. Peddie in delivering her, under similar circumstances, by perforation of the head. But here the child's heart was heard distinctly with the stethoscope; and he at once agreed that I should try to deliver her by turning the infant, thus compressing and indenting the flexible skull of the fœtus, instead of perforating it, and affording (as I have, for some time past, taught and believed) some chance of life to the child, and more chance of safety to the mother. The patient was placed under the influence of chloroform, still more deeply than when the forceps were used. I passed up my hand into the uterus, seized a knee, and easily turned the infant, but very great exertion and pulling was required to extract the child's head, through the distorted brim. At last it passed, compressed and elongated. The child was still-born, but by applying the usual restorative means, it speedily began to breathe and cry; and when I called two days afterwards, I found both it and the mother well. The mother was utterly unconscious of aught that had occurred or been done whilst she was breathing the chloroform, and lay most passively still and asleep during the whole of the operative proceedings. She did not awake till about a quarter of an hour after her infant was born.

Case 9.—In the Maternity Hospital; first child. Labour began at ten P.M., (Nov. 21st.) I was desired to see her at six A.M., (22nd.) The os uteri was well dilated, but it was evident that the pelvic canal was contracted throughout, and the head was passing with unusual difficulty through the brim. The patient was complaining much of her sufferings. It was evident that it would be a very tedious, and probably, at last, an instrumental case, and one therefore calculated to test the length of time during which chloroform might be used. She began to inhale it at a quarter past six A.M., and was kept under its influence till a quarter past seven P.M. —the date of her delivery,—thirteen hours in all. From the time it was begun to the time delivery was completed, her cries and complaints ceased, and she slept on soundly throughout the day. The bladder required to be emptied several times with the catheter, The head passed the os uteri at ten A.M., and during the day, gradually descended through the pelvis. At seven P.M. I at last deemed it proper to deliver her by the forceps; the head, which was now elongated and œdematous, having by that time rested for some hours against the contracted pelvic outlet, with little or no evidence of advancement; the bones of the fœtal cranium overlapping each other, and the fœtal heart becoming less strong and distinct in its pulsations. A warm-bath, irritation of the chest, &c. were necessary to excite full and perfect respiration in the infant. Whilst we were all busied with the infant, the mother lost some blood, but the placenta was immediately removed, and the uterus contracted perfectly. On afterwards measuring the quantity of blood lost, it was calculated to amount to fifteen or eighteen ounces. The mother's clothes were changed, she was bound up, and removed to a dry bed before she awoke. She had at first no idea that the child was born, and was in no respect conscious of being delivered. In fact she had been "sleeping" according to her own account, from the time she begun the inhalation, and thought she remembered or dreamed that she heard Dr. Williamson, the house-surgeon, speak near her once or twice. Dr. Beilby, Dr. Ziegler, &c., saw the case with me. Three days afterwards, I found the mother and child perfectly well. She continued to recover so rapidly, that she insisted on leaving the hospital on the tenth day after delivery.

Lancet, Dec. 11, 1847, *p.* 623.

Dr. Murphy said, that he had only employed the inhalation of ether in extraordinary cases, because he found that it caused excitement both before and after insensibility, and he dreaded the occurrence of hemorrhage at such times. Did chloroform cause a similar excitement?

Dr. Snow considered the excitement to arise from the slowness with which ether was administered, which might be necessary or not, as the patient could bear it; the chloroform by its more rapid action, would not cause this so much, but the return to consciousness, after taking it, presented the same symptoms as were exhibited after the use of ether. He considered that two practitioners should be present in a case of labour if inhalation were to be practised, as one person's attention should be devoted to the inhalation only. Patients would not die from convulsions while inhaling, but from continuing to inhale after collapse had appeared.

Dr. Murphy had known ether to cause spasms resembling the access of puerperal convulsions.

Lancet, Nov. 27, 1847, *p.* 575.

[In a case attended by **Dr. Rigby**,]

As the head approached the os externum the pains became powerful, and the patient expressed much dread of their recurrence. The perineum was now considerably distended by the head during a pain, and the labia somewhat separated by it. A sponge with fifty or sixty drops of Hooper's chloroform, was applied to the nose with a pocket handkerchief, and she was almost immediately under its influence. Up to this moment the head, even during the most complete interval between the pains, had not receded to any considerable extent, but the moment she was insensible the head receded further than I have ever noticed before, all detruding pressure upon the child, whether from the uterus or abdominal muscles, having ceased. The pains up to this moment had recurred every two or three minutes, but now there was an entire cessation for nearly ten minutes; when, however, pain came on, it seemed as powerful as before, and I decidedly think that the parts did not present so much resistance; they seemed more soft and flaccid, almost as they are known to be in syncope from severe hemorrhage. Consciousness returned, as from a deep sleep, and she begged to have it repeated, which was done, and as she gradually lapsed again into deep sopor, she murmured faintly, "It is so delicious." The pains returned at the same long intervals, and in about an hour the child was born, the chloroform having been renewed occasionally. She was slightly sensible from time to time, but seemed to suffer little, and fancied she had been but a few minutes under the influence of chloroform. I am aware that an opinion given on a single trial of this remarkable agent must be taken with caution, but every person present, with myself, felt convinced that but for it, the child would have been born late on the evening of the 2nd instead of at a quarter past twelve, and therefore just into the morning of the third instant. There can be no doubt that, besides allaying pain in obstetric operations, the perfect flaccidity and relaxation which it produces in the soft parts will prove of considerable service.

Medical Times. Dec. 11, 1847, *p.* 151.

[The opinion here expressed by Dr. Rigby respecting the relaxation of the soft parts produced by this agent, is confirmed by others. The reader will find at page 415 of Retrospect, Vol. xvi, a hint on this subject. It appears that experience confirms the idea we entertained of the efficiency of these agents in such cases, for at the meeting of the Westminster Medical Society, January 8, 1848,]

Mr. I. **Brown** related a case of protracted labour, in which, the pains having ceased, and the os uteri being extremely rigid, he administered, at the request of the woman, a drachm of ergot of rye without any effect. Having waited an hour, he made her inhale chloroform; pains almost immediately came on, the os uteri relaxed, and the labour was quickly terminated. He had found the chloroform always produce expulsive efforts of the uterus.

Medical Gazette, Jan. 14, 1848, *p.* 75.

[Another case showing the value of this agent for the same purpose, is related by JOSHUA PARSONS, Esq., of Beckington. The patient in her previous labour had suffered much from rigidity of the os uteri. On the present occasion, after the pains had continued all day, the membranes were unbroken, and the os firm and hard. Mr. Parsons says:]

The external passages were in the state so graphically described by Dr. Rigby as being dry, hot, tender, and feeling as if stretched tightly over the bones. After half an hour's continuation of the pains, finding no appreciable change in the state of the parts, and seeing no prospect but a repetition of her former wearisome labours, I proposed inhalation, at least as a means of obtaining a temporary rest. She immediately consented, and was soon enjoying a quiet sleep, during which the pains, however, continued. In half an hour I again examined, and was as much surprised as gratified to find the head of the child resting on the perinæum, and the external parts dilatable and plentifully lubricated with mucus. My stock of chloroform being now exhausted, the woman was conscious of the two succeeding pains which sufficed for the birth of the child.

[Dr. ARNOTT, of Gorleston, relates also a case of rigidity, in which, he says:]

The passages were dry, rigid, and hot; the os uteri unyielding and undilatable, opened up to about the size of a half-crown, and just within it a constricted band of circular fibres, apparently of still more intractable texture, imparted to the touch the feeling even of carcinomatous degeneration, upon which a strongly ossified fœtal cranium rested as upon a shelf. To add further to this unpromising state of things, the membranes had some time previously ruptured, and the liquor amnii drained away guttatim—thus putting one of the most efficient preparatory agents of the parturient process completely in abeyance. The pulse was, however, little or not at all affected, either in its frequency or other characters.

I determined upon the administration of chloroform. A lawn handkerchief was moistened with half a drachm of the fluid, and held over the mouth and nose a short time antecedent to the accession of the uterine throes. The anæsthetic effect was promptly developed, and it seemed to me to be still more readily induced at each succeeding exhibition, suggesting the impression of its possessing a cumulative action. After the fourth parturient effort, under the influence of chloroform, the vagina was found pretty freely lubricated with mucus; the os uteri was much more widely opened, as well as more dilatable; and the previously existing circular band of unyielding fibres assumed a crescentic shape merely, the posterior segment of the circle being completely obliterated. The expulsive forces gradually succeeded and increased both in frequency and intensity; the fœtal head descended with its face anteriorly, and was at last thus expelled—the shoulders and body quickly following at about half-past eleven A.M., or one hour and a half from the first administration of chloroform. The placenta followed in about three minutes.

[The next, a first labour, is by J. B. Hancorn, Esq., Shoreditch, who says:]

On my arrival at five o'clock, P.M., I found the os uteri dilated to about the size of a shilling, with a wiry edge, and muscular rigidity of the perinæum—in fact, such as would lead one to prophesy the termination of the labour at about five o'clock on the following morning.

The patient immediately requested me to administer the chloroform, which I did, attentively watching its effect. In two minutes she became perfectly serene, and free from any expression of pain, the countenance calm and composed; no flush nor livid cheek, such as I have seen in other cases. The uterine action, which had been hitherto irregular, became steady in its interval as to time, thus leading one to suppose that the natural process goes on with more regularity when not under the influence of the will of the patient.

The uterus immediately began to yield, the muscular tenacity and resistance of the perinæum subsided, and, in fact, the muscular fibre became relaxed, and no longer offered resistance to the passage of the child. And here, I may observe that the perinæum, by an action whether voluntary or otherwise, generally impedes the progress of the child, and in many cases presents a formidable obstacle: now this, at least, appears to be completely overruled by the action of chloroform, which, in itself, even without any other advantage, is of the utmost importance in relation to the sufferings of the patient, and the time of the accoucheur. The expulsive power, in the present case, appeared to be greatly increased, as has been also observed by eminent practitioners.

Now, I do not hesitate to state, that without the aid of chloroform, the probability is, the child would not have been born until nine or ten hours afterwards.

[There is a case of puerperal convulsions related by W. J. Kite, Esq., of Hatfield, in which the chloroform seemed to exert a most beneficial effect. The patient was thirty years of age, and in her second labour. After irregular pains had existed for about twenty-four hours she was seized with convulsions; bleeding was employed, but the convulsions continued. In about thirteen hours more, the membranes having been ruptured for some time, the os dilated to the size of a crown piece, and the convulsions still recurring at short intervals, Mr. Kite says:]

Mr. Thomas now suggested the inhalation of chloroform, as the most likely means of affording relief. A sponge, containing chloroform, was held to the nose, and its effects were soon visible. In less than five minutes she became perfectly quiet, and the convulsions ceased. In ten minutes, contractions of the uterus came on, and continued regularly; the head of the child gradually advanced, and as it descended into the vagina, the hæmorrhage ceased. In an hour and a quarter from the first inhalation, the influence being kept up the whole time, she was delivered of a male child, and without having any recurrence of the convulsions. The inhalation was now discontinued. The placenta followed in a few minutes; the uterus contracted and no hemorrhage followed.

Lancet, March 4, 1848, *p.* 254.

[Mr. Fearn, of Derby, has also given the chloroform with excellent effect in a case of puerperal convulsion before delivery. The woman had been insensible during the whole day, with frequent convulsions, which ceased almost immediately after the chloroform took effect; and when completely under its influence, she was delivered with the crotchet.]

Medical Gazette, Feb. 11, 1848, *p* 325.

[Mr. Clifton, of Welwyn, relates another case in which it was equally efficacious. Notwithstanding the most violent convulsions, the woman sank into a tranquil sleep in a minute or two after its use.]

Medical Times, Feb. 12, 1848, *p.* 335.

[Dr. Murphy, who is decidedly favourable to the use of chloroform, remarks, as one of its advantages, that its anodyne effect is produced without any previous or subsequent excitement. The following, he says, are the effects of chloroform on parturition:]

1st. It does not interfere with the action of the uterus, unless it be given in very large doses, which is never necessary. 2nd. It causes a greater relaxation in the passages and perineum; the mucous secretion from the vagina is also increased. 3rd. It subdues the nervous irritation caused by severe pain, and restores nervous energy. 4th. It secures the patient perfect repose for some hours after her delivery. These three last effects consequently render an operation much easier to perform, and the recovery of the patient afterwards much more favourable. 5th. The order of its effects on the vital functions seems to be—loss of sensation—partial loss of voluntary motion—loss of consciousness—complete loss of voluntary motion—stertorous respiration—loss of involuntary motion—cessation of the action of the uterus—of respiration—of the action of the heart. 6th. Its injurious effects, when an ordinary dose is given, seem to depend on constitutional peculiarities, or on improper management. Much excitement about the patient may render her violent. Catalepsy has occurred in some; clonic contractions in others. Some patients are slow in recovering from the effect of a large dose: they remain giddy during the day, and sometimes faint when they stand upright.

Dr. Murphy does not find that chloroform hastens the dilatation of the os uteri.

Medical Gazette, March 31, 1848, *p.* 551.

[On the other hand, we find the eminent authority of Dr. Ashwell, of Guy's Hospital, is against the use of chloroform in natural labour. He states it as his conviction that *chloroform ought never to be used in natural labour:* he thinks that whatever may be the advisability of using it in surgical operations, these are not parallel cases, and cannot be put in the same category. He says:]

Of course much might be said as to the propriety or necessity of the innovation; but this I waive, and I ask at once—Why is this great risk to be run? It is not pretended that it shortens the duration of the process; nay, if anything be attributed to chloroform on this head, it is almost certain that delay must be the consequence of its exhibition. There is no evidence to show that any *favourable* effect, save the unconsciousness of pain, can be traced to its influence.

I do not deny that physical pain is an evil; but before we attempt to abolish this hitherto invariable accompaniment of natural labour, it is incumbent on the advocates of the use of chloroform, to prove to demonstration that this interference is entirely safe. A careful perusal of one of the able and admirable lectures of Dr. Tyler Smith, (vide the Lancet, March 27, 1847,) will satisfy any impartial inquirer that obstetric etherization is, at least, of very doubtful benefit and of very complicated and uncertain operation.

Baron Dubois says: "My profound conviction is, that inhalation of ether in midwifery should be restrained to a very limited number of cases, the nature of which ulterior experience will better allow us to determine." Let it be remembered that this opinion was given of ether, undoubtedly (according to the recent and ably conducted experiments of Mr. Wakley, jun.) a safer agent than the chloroform. M. Dubois remarks, that in one of his patients "the most intense premonitory signs of convulsion were induced; the congestion was so great that he almost expected the eyeballs to syringe forth blood." Dr. Tyler Smith further adds: "I know it is ungracious to take the part of an alarmist in such a question, but many fatal cases have now occurred after operations in which etherization has been practised. The patient who underwent the Cæsarian operation died; another patient on whom extirpation of the eyeball was performed, sank; a clergyman whose leg was amputated never rallied after the operation; two of the women delivered while under the influence of ether, by the Baron Dubois, subsequently died; and fatal collapse occurred in the case of a woman, from whose thigh a tumour was removed.

The morbid phenomena fairly attributable to ether, (a safer agent, be it remembered, than chloroform,) in cases which have recovered, have been, nausea, sickness, stertorous breathing, pulmonary and cerebral congestion, convulsions, and protracted failure of the heart's action;"—a sad list truly.

These facts, and three deaths at least from the new agent, chloroform, besides many other serious results, will probably satisfy most practitioners that "a meddlesome midwifery" is still a bad midwifery.

In common with most teachers, I have long inculcated at Guy's Hospital, "that unnecessary interference with the providentially arranged process of healthy labour is sure, sooner or later, to be followed by injurious and fatal consequences."

I think the chloroform will be no exception to these precepts; nay, so sure am I that it needs only to be extensively used to ensure its entire abandonment, that I would willingly leave it to such a result, if it might be accomplished without further loss of life. But the instances in which it has already proved fatal, although they will alarm, may not so quickly as is to be desired lead to its final relinquishment. It is therefore a duty to urge every just plea against its further use.

Dr. Simpson has put forth a pamphlet to exonerate the new practice from any censure on religious grounds. In this I do not mean to follow him. But it does seem to me to involve a grave responsibility so far to interfere with a natural process as to impair its integrity and perfection. The chloroform, if used effectually, induces at the least cerebral unconsciousness—in other words, a temporary paralysis or suspension of the functions of the brain, thus depriving the woman, during the most momentous function of her life, of all moral control. What may not be said of the irreligion and criminality, supposing the case to be a fatal one, of destroying before the extinction of life the higher principle, from the proper exercise of which our existence derives its true worth and responsibility—of the criminality of permitting a human being to cease to live, when we ourselves had destroyed the possibility of giving her any idea that this solemn event was certainly impending? The practitioner who administers chloroform in labour cannot tell, "a priori," whether this may not be one of the few cases in which death is to happen; nor can he know, in many instances at least, whether there may not exist some unsuspected disease of the brain or heart, which this new gas may carry to a sudden and fatal termination. I do not envy the remorse which must follow the conviction, that by such practice the momentous arrangements of a dying hour have been entirely prevented.

I forbear to enter into the question—whether there be any form of labour in which chloroform should be used—further than to say, in instrumental and flooding cases, we rely as a considerable evidence of the safety of the patient, and of the uninjured state of the womb and adjacent parts, on that very pain which it is the purpose of the gas to destroy. Whether in the very difficult cases of turning, where the womb is most firmly and tonically contracted round the child, it might be of use, I am not prepared to say. I fear, however, it would produce but little benefit. Lately, at Enfield, I was consulted in a case of rigid perinæum, where the chloroform was fully exhibited, under the impression that it might induce relaxation. No such result followed. Dr. Millar, with great promptitude, applied twenty leeches to the part, and the child was eventually born dead. If there was any effect produced here, it was to weaken the uterine effort, but whether the chloroform produced the death of the child, I cannot say. In conclusion, I beg to assure Dr. Simpson that I entirely disclaim every feeling but a sense of duty.

Lancet, March 11, 1848, *p.* 291.

[In some cases of dysmenorrhœa we shall also find it a valuable agent. **Dr. Bennet** relates the case of a young lady whom he was attending for an affection of the cervix uteri, in whom menstruation was always very painful, and accompanied by great mental and physical depression. The chloroform afforded great relief. It was beneficially used also at the next period: and in another lady in much the same condition as the first, the use of chloroform mitigated the pains to a very great extent.

Dr. Bennet thinks that when chloroform is inhaled in any quantity, it is not so innocuous as is generally believed; its use being sometimes followed by extreme muscular debility and nervous irritation for several days.]

Lancet, Feb. 19, 1848, *p.* 204.

[**Dr. Protheroe Smith** thinks that in cases of extreme exhaustion from hemorrhage, ether will be more applicable than chloroform, from acting as a decided and permanent stimulant.]

Medical Gazette, Jan. 14, 1848, *p.* 80.

[This powerful agent, however, cannot always be administered with safety: and we suspect that many alarming cases have been witnessed which have never been publicly reported. The most decided case of fatality which has been published is perhaps the following by Dr. Meggison: and, in the opinions of different medical men which are subjoined, will be found embodied some of the most striking objections to the use of this agent, and to its incautious administration.

The following is **Dr. Meggison's** account of the case of Hannah Greener, as communicated by him to the Medical Gazette. The patient was a well-developed girl of 15,—the operation, that for onychia: she had previously undergone a similar operation at the Newcastle Infirmary, under the influence of ether. Having experienced the advantages of this agent, she insisted upon having an anæsthetic again administered. Dr. M. says,—]

She appeared to dread the operation, and fretted a good deal: in fact she commenced sobbing on our entering the house, and continued so until seated in the operating chair, and commencing the inhalation, which was done from a handkerchief on which a teaspoonful of chloroform had been poured. I told her to put her hands on her knees, and breathe quietly, which she did. In about half a minute, seeing no change in breathing, or alteration of pulse, I lifted her arm, which I found rigid. I looked at the pupil and pinched her cheek, and, finding her insensible, requested Mr. Lloyd to begin the operation. At the termination of the semilunar incision she gave a kick or twitch, which caused me to think the chloroform had not sufficient effect. I was proceeding to apply more to the handkerchief, when her lips, which had been previously of good colour, became suddenly blanched, and she spluttered at the mouth, as if in epilepsy. I threw down the handkerchief, dashed cold water in her face, and gave her some internally, followed by brandy, without, however, the least effect, not the slightest attempt at a rally being made. We laid her on the floor, opened a vein in the arm, and the jugular vein, but no blood flowed. The process of inhalation, operation, venesection, and death, could not, I should say, have occupied more than two minutes.

Since the occurrence of this case, I have heard of several where temporary inconvenience was produced by chloroform, but not of any decided character, nor of long duration. In one case, after a third administration, temporary but furious delirium was produced; several complained of head-ache and oppression of respiration; and I have no doubt, now that the ice is unfortunately broken, we shall find that chloroform is not the infallible agent which it was vaunted to be by its talented though sanguine discoverer, and we shall hear much less of the non-professional and drawing-room exhibitions of the vapour.

[In a letter written by H. G. Potter, Esq., Surgeon to the Newcastle Infirmary, that gentleman (whose patient H. Greener was) states that he gave her a full dose of ether, three instruments (and *not* three different kinds of ether,) being used; that she was completely insensible during the operation, and that she had no subsequent bad symptoms. Mr. Potter says,—]

My report states, that "she screamed during the operation, but did not feel any pain." Her pulse never varied much; her countenence was *flushed* (in chloroform I have always seen it more or less blanched, which agrees with the evidence.) She had no hysterical symptoms; no laughing, no crying; the pulse became weaker while under the immediate influence of ether, but soon recovered its usual state. When I visited her half an hour after the operation, there were no untoward symptoms present, nor did any such symptoms exist during her residence in the Infirmary: indeed, if she had suffered from any ill effects of ether, why should she have so earnestly requested to have the "stuff" anministered before she submitted to a second operation?

Medical Gazette, Feb. 11, 1848, *p.* 255.

[Professor Simpson thinks that the girl died not from the chloroform, but from the means used to revive her. He says,—]

With the best of motives and intentions water and brandy were poured into the girl's mouth. They were, of course, allowed to rest in and fill up the pharynx of the patient, as in her state of syncope and anæsthesia she was not in a condition to swallow them. The attempt at swallowing mentioned in the evidence was, I have no doubt, an attempt at breathing only, or at breathing combined with swallowing. But it was impossible for the patient, in her weak and torpid state, to inspire through a medium of water and brandy, any more than it would have been possible to inspire if the whole head and face had been inevitably submersed in the same fluid. The liquid would be partially drawn into the larynx. "She rattled in her throat." "In a minute more she ceased to breathe."

In commenting on "Injuries of the Head," Mr. Guthrie, when speaking of the treatment of concussion of the brain, a state rendering the sufferer like Dr. Meggison's patient, "senseless and motionless, and the countenance deadly pale," correctly observes, "It is improper to put strong drinks into his mouth, for he cannot swallow, and if he should be so far recovered as to make this *attempt*, they might possibly enter the larynx and destroy him. Would not the same result happen if the same treatment were applied to a person in a deep state of apoplexy, epilepsy, syncope, or narcotism?

[After showing that the morbid appearances as reported to the coroner are exactly those of simple asphyxia, and differ in several respects from those found in the bodies of animals killed by chloroform inhalation, Dr. Simpson says,—]

I have no desire to throw any, the very slightest, blame upon Dr. Meggison. Nothing could be possibly further from my wishes and intention. On the contrary, I take very great blame to myself for not publishing sooner, as I intended, a suggestion to my professional brethren, to warn them against this source of danger in the treatment of chloroformed or apathized patients. To point to it, as I have now done, will, however. I hope, be sufficient. And I will merely add, that I sincerely believe, from all that I have seen, that in such a case as Dr. Meggison's patient, *nothing* whatever requires to be done but the removal of the handkerchief or inhaler, and the free admission of air to the face of the patient. If aught else is to be attempted, it should amount to sprinkling cold water on the face, compressing the chest, or otherwise exciting inspiratory acts. And if still further measures are required, then, doubtlessly, *artificial respiration* should be the measure employed.

Lancet, Feb 12, 1848, *p.* 175.

[Dr. Meggison afterwards altogether denied the truth of Prof. Simpson's supposition, that Hannah Greener was choked by the brandy. He stated distinctly that she *swallowed* the brandy, although with some difficulty. He also denied that the congestion of the lungs could have been produced by the brandy; and affirmed it to have been greater than any congestion produced by simple asphyxia, and resembling only that found (on the testimony of Dr. Glover) in animals poisoned by chloroform; which opinion seems to be corroborated by the experiments of Mr. T. Wakley.]

Medical Gazette, Feb. 25, 1848, *p* 341.

[On this case the Editor of the Medical Gazette observes,]

It appears from the candid statement made by Dr. Meggison, that not more than a teaspoonful of the liquid was employed—a very common dose, and not an undue quantity. It was applied on a warm cloth held to the mouth and nostrils; in about *half a minute* there was rigidity of the muscles of the arm, with quick respiration, but no stertor. The lips then became suddenly blanched, and the patient appeared to be in an epileptic fit. Cold affusion and stimulants were employed,—a vein in the arm and jugular were opened, but no blood flowed,—in fact every attempt was made to resuscitate the female, but without effect, and in a minute she ceased to breathe.

The time that had elapsed from the first inhalation of the chloroform to her death, could not have been more than three minutes. In a letter elsewhere inserted, Dr. Meggison states that "the whole process of inhalation, operation, bleeding, and death, could not have occupied *two minutes*." This rapidly fatal action of chloroform vapour cannot be referred to the quantity used,—to the youth of the patient, for younger subjects have respired it without danger,—or to the time during which it was employed, for the patient was dead in two minutes—whereas in other cases persons have been kept under its influence in an unconscious state for twenty-five minutes, and even longer.

That it was the cause of death was evident, not merely from the symptoms, but the appearances found in the body. There was great congestion of the lungs:—"the pulmonary tissue was filled with bloody froth, which was also found in the interior of the bronchi mixed with mucus. * * On examining the larynx and trachea, the epiglottis was observed to be reddened at the summit, and of a vermilion hue. These are precisely such effects as might have been anticipated from the experiments made by Dr. Glover, with liquid chloroform, more than five years ago. There is great reason to believe that what takes place in the lungs occurs throughout the whole body, *i. e.* that there is under the influence of this poisonous vapour, a general enlargement and distention of the capillary vessels. They circulate more blood, and the blood passes of a red colour through vessels which were before invisible. To this we may ascribe the injection of the conjunctivæ, and the increase in the secretions—as of tears from the eyes, and of saliva from the salivary glands. In the same way, it is not improbable that the capillaries of the brain become preternaturally congested; and a species of apoplexy is produced, under which the patient sinks. In this instance we are informed that the brain externally and internally was more congested than usual; and the ventricles contained rather more than the usual quantity of serum. Sir John Fife's report shews that the stomach, liver, kidneys, and spleen, were more congested than natural; and, in short, the inspection appears to us to bear out the view above expressed, that this poisonous vapour tends to cause a preternatural distension of the capillary system throughout the whole of the body. A turgid state of the capillaries may perhaps be regarded as a common effect of the narcotic poisons.*

[The writer of the above thinks that Hannah Greener was poisoned by the narcotic vapour, and suggests two circumstances to which the occurrence might be due; idiosyncracy, and the administration of the vapour too rapidly, and in a form too highly concentrated. It is, therefore, he thinks advisable to make trial of small quantities, that we may ascertain the existence of any peculiarity of constitution, before giving a patient a full dose. The rapidity of action of chloroform, he thinks to be a disadvantage; and urges that we should not allow the full effect to take place in less than two minutes. Upon this point, he says:

The vapour acts much more rapidly than ether; but, as Dr. Snow observes, this is not an unalloyed advantage. In his opinion, it is desirable not to produce a full degree of chirurgical insensibility in a shorter period than *two minutes.* This precaution is necessary, not only to afford an opportunity for watching its effects, but also on account of the accumulative properties, which chloroform, like other narcotic vapours, possesses — a fact which has hitherto received but little attention. He has observed that the effect of the vapour sometimes increases for twenty seconds after the inhalation is discontinued; and he thinks it desirable to take six times this period, or two minutes, for producing complete insensibility, in order to avoid danger. When the patient breathed deeply, he diluted the vapour still further with external air. Now the question is, whether in this case, the deceased did not receive the vapour in too concentrated a form, and too rapidly; for she was, it appears, dead at the time at which, according to Dr. Snow, the degree of insensibility proper for a surgical operation should be produced. There is another circumstance pointed out by Dr. Snow, which deserves attention,—the quantity of vapour breathed when the liquid is placed on a warm handkerchief is liable to great uncertainty. The degree to which it is diluted with air, can never be known. Operators, it is true, contrive to avoid any ill effects from this mode of administration, by not applying the handkerchief too soon to the nostrils and mouth, and by occasionally withdrawing it. A man experienced in its use may thus avoid any risk of danger; still, considering the serious effects which have been observed to follow this mode of administering the vapour, it appears on the whole advisable to employ an apparatus as suggested by Dr. Snow, and, if possible, to regulate the temperature for its evolution.

Medical Gazette, Feb. 11, 1848, *p.* 236.

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* Mr. Sibson, of Nottingham, observed on dipping the limb of a frog into a watery infusion of opium, that all the capillaries of the limb were soon injected with blood. The effect of the vapour of prussic acid on the capillaries of the conjunctiva has been long known, and Mr. Nunneley, of Leeds, observed in his experiments with this poison on animals, that turgescence of the capillary system was one of the well-marked effects produced by it. These observations are confirmed by the more recent experiments of Mr T Wakley, Jun.

[Dr. Glover, it will be remembered, stated his approval of the means adopted by Dr. Meggison for the recovery of the deceased, especially the attempt at bleeding: but as blood *did not flow*, the patient being dead before a vein was opened, the case before us does not prove anything at all as to the utility of bloodletting. Dr. Simpson thinks that the woman was suffocated by the attempts made to revive her. With this view the editor of the Gazette disagrees: he says,—]

To believe that the deceased was asphyxiated, it is necessary to suppose that a mouthful of cold water, followed by brandy, "a little of which was swallowed," found its way into the air passages, and prevented her from respiring. This view appears to us to be quite inconsistent with the facts. A mouthful of cold water and brandy thus administered, would not we believe cause asphyxia; and had it so operated in this case, brandy and water would have been discovered in the air tubes on inspection. The plain and undeniable inference appears to us to be, *that the deceased was poisoned by chloroform vapour*. It is of no use attempting to place the facts before the public in any other shape. The post-mortem appearances coincide with what might have been expected from those met with by Dr. Glover, in 1842, in his experiments on animals poisoned by chloroform. We have already assigned reasons why we do not think that idiosyncrasy had any necessary connexion wih the fatal result. It bears out the view expressed by Dr. Simpson, in a paper lately published, to the effect that if chloroform be exhibited in too strong a dose, and given uninterruptedly for too great a length of time, it will produce serious consequences, and even death. We agree with Dr. Snow, in thinking that the vapour was probably here given in too concentrated a form, and too rapidly; and that it thus destroyed life. This appears to us to be the only reasonable explanation of the facts.

Medical Gazette, Feb. 18, 1848, *p.* 283.

[Dr. Snow has all along cautioned the profession against giving chloroform on a sponge or handkerchief, believing that its too rapid action on the system is highly dangerous. He says,—]

Although many of the inhalers in use are very faulty, I consider that they are safer than the handkerchief. They are liable to the objection that they obstruct the respiration, by causing the air to pass through sponges; but with a limited supply of air the chloroform is necessarily limited also, as its vapour, having no existence in a separate state at common temperatures, can only be inhaled with the air. To give chloroform in surgical operations, an instrument should be used which offers no obstruction to respiration, and by which the proportion of vapour in the air can be regulated; and those who have but a handkerchief or sponge had better use ether, which I consider has not yet been known to cause death, until other narcotic vapours may be introduced.

In the case under consideration, the fatal result should be attributed to the action of the chloroform on the nervous centres having extended so far as to put a stop to respiration; and I cannot agree in the opinion of Sir John Fife, that the immediate cause of death was congestion of the lungs, an affection which could only have caused death in a somewhat tedious and not in a sudden manner, and which undoubtedly ought to be looked on merely as a consesequence of the mode of dying, and as an indication that the heart continued to inject blood into the lungs after oxygen was no longer admitted to facilitate its passage through the capillaries. In certain instances this is the case in animals killed by chloroform, whilst in other instances the respiration and circulation seem to cease together.

Medical Gazette, Feb. 18, 1848, *p.* 278.

On the Treatment of Poisoning by Chloroform Inhalation.—The patient should be laid on the floor, with his head, if possible, near a current of fresh air. The breathing may be assisted by compressing the chest, and a little cold water ought to be thrown on the face and chest. If the symptoms continue notwithstanding these means, artificial respiration should be diligently practised, and the extremities briskly rubbed with hot cloths. The friction promotes the capillary circulation, and in this manner, undoubtedly contributes powerfully to restore the action of the heart and lungs. In extreme cases electro-galvanism should not be neglected; shocks may be transmitted through the chest, so as to assist the efforts at artificial respiration, and, in the case of syncope, a powerful galvanic current should be transmitted through the heart. A very powerful and rapid means of rousing the sinking powers of life, and one readily obtained, is found in the application of boiling water to the chest. This is effected by filling a glass or cup with boiling water, over the top of which a towel is placed, and then inverting the vessel on the breast of the patient. The efficacy of this application has been repeatedly displayed in the practice of M. Rayer of Paris. Individuals who, from disease, were so near death as to be completely insensible and speechless, have thus had intelligence and speech restored, while life was prolonged for a considerable time. Of course, it is understood that we only suggest its use in extreme cases. Dr. Simpson directs attention to the impropriety of administering stimulant liquids by the mouth, when, from the state of insensibility, the power of swallowing is lost. The danger of their covering the aperture of the glottis, or entering the larynx, and so hastening death by suffocation, is indeed imminent. When the saliva is secreted in large quantity, it will be advisable to place the patient on his side, to prevent it acting injuriously in the same way. The loss of the stimulants is scarcely to be regretted, as the other means above proposed are infinitely more efficacious.

Monthly Retrospect, March, 1848, *p.* 50.

[In concluding our remarks on the use of anæsthetic agents in medicine, we cannot help adverting to some very important and novel views on this subject, brought before the branch meeting of the Provincial Association at Leeds, on June 7th, 1848, by Mr. Nunneley of that town. This gentleman stated that for many months he had been engaged in making experimental researches on those agents, with a view to ascertain, as far as possible, the modus operandi, the doses which may be borne with impunity, and the different modes of application: as well as in case of an overdose, the best means to be adopted to counteract it. His experiments have not merely extended to the common anæsthetic agents employed, such as ether and chloroform, but he has been endeavouring to ascertain whether or not there may be some others, which may either be more safely administered, or may possess still greater advantages than the usual agents employed. He stated that he believed it not improbable that it would ultimately be found that all those preparations, which have a *radical basis*, (in the language of modern chemistry,) such as acetic ether, bisulphuret of carbon, aldehyde, and many others of an analogous character, upon some of which he had made extensive experiments, would be found to possess similar properties on the animal economy. He did not intend to enter on this important question generally, which he reserved for another occasion.

This much Mr. Nunneley was prepared to state, *that chloroform appeared to be the most deleterious to life*, to require the greatest care in its administration, and that the boundary up to a fatal dose is by no means well marked—that of two animals, in apparently the same condition, the same dose being given in precisely the same way to both, the one will speedily die, while the other will bear it with impunity,—that from the effects observed, he has reason to think the ultimate effects are in some respects not dissimilar to those produced by prussic acid,—that to some animals, as for instance the newt, the frog, the toad, some fish, slugs, snails, and some insects, the effects are *more* rapidly fatal than prussic acid of Scheele's strength; and that even in higher animals, when under the influence of an incomplete dose, or recovering from the effects of a large dose of either chloroform or prussic acid, the phenomena are in many respects very similar; and further, that the numerous post mortem examinations which he has made, fully corroborated this opinion. He stated that acetic ether, with which he had made numerous experiments, possessed very considerable anæsthetic powers,—that bisulphuret of carbon also possesses to some extent similar power, and so far as his experiments go, it is very important to add, that this power is of a safe character, the animal speedily recovering.

But of all these remedies he believes that sulphuric ether will be the safest and least noxious to life. On these points Mr. Nunneley intends hereafter to lay his experiments, already very numerous and varied, before the profession. His chief object on the present occasion was to call the attention of the profession to experiments proving, as he thinks, the value and safety of a *new mode* of administering these agents.

His object on the present occasion was to show that the action of all, or most of these agents, might be produced *locally by local application*, the sensorium being unaffected, consciousness being retained, and the limbs not subjected to their influence, being unaffected. He stated that either by *immersion* in a small quantity, or by the *vapour applied* merely for a limited period, a limb may be rendered *perfectly motionless and senseless*, and what may be an additional advantage, *fixed in any desired position*. He stated that he had immersed his finger in these fluids for about half an hour and an hour, and at the end of this period the finger was nearly powerless and insensible, and that it was forty-eight hours before the effects entirely disappeared, a sensation of heat and discomfort extending along the tract of the nerves to the axilla—that before operating on a difficult case for artificial pupil, he had applied for twenty minutes a small portion of the vapour of chloroform to the eye, by means of a small jar which accurately fitted the orbit, with the effect of rendering the parts nearly insensible. The first effect of these agents when locally applied is to produce redness, heat, and smarting, which subside, followed by swelling and redness of the integuments, which remain for some time. Mr. N. stated that he could completely paralyse any limb of frogs or toads by immersion or exposure to the vapour in about five minutes or less; and he mentioned, as a curious fact, that if the exposure to the influence were continued longer than was sufficient to produce a local effect, this influence extended to the corresponding limb of the other side: thus, for instance, if one hind leg became *too much* influenced, the other hind leg partook of the same effect—if the fore leg were too much effected, then the other fore leg became so likewise, and so on throughout the whole body—a result which Mr. Nunneley mentioned as strongly corroborative of his experiments with prussic acid, as detailed in the last volume of the Provincial Transactions, and strongly supporting the opinions of Dr. Marshall Hall on "reflex action." These views were illustrated by a series of interesting experiments before a highly respectable audience of medical men, on frogs and toads, in which, after immersion for a few minutes, the limbs became insensible, and were amputated in repeated portions without any symptoms of pain whatever.

The experiments which Mr. Nunneley performed before the meeting were perfectly successful and satisfactory; and if his views should prove to be correct, which we think very probable, they will give a new impulse to the use of anæsthetic agents, and enable the most cautious practitioner to use them without the danger which may attend their internal administration.

He stated that by this new mode of application to the hind legs of rabbits he had been enabled to amputate the toes without the least indication of feeling—that he was not prepared to state what was the best mode of applying it, or the exact quantity to be used, which obviously can only be determined by a very lengthy series of experiments on different animals, which he is at present zealously pursuing, his principal object being to communicate the important *physiological local effects* of anæsthetic agents generally, which we believe have not hitherto been announced.]

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A SYNOPSIS,

CONTAINING

A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOREGOING PAGES OF THIS VOLUME; AND SHOWING, AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS WITHIN THE LAST HALF-YEAR. (ARRANGED ALPHABETICALLY.)

DISEASES AFFECTING THE SYSTEM GENERALLY

ANASARCA.—*General.*—Give digitalis in gradually increasing doses, until it acts decidedly on the system, watching the patient narrowly at least three times in the twenty-four hours. Begin with (℞. Tinct. digital. ♏ xv.; potas. acet. ʒi.; sp. juniper co. ʒij., decoc. scoparii co. ʒxiv. M.) twice a day; and increase the quantity of digitalis by five drops daily, until its effects are marked. Then give wine, ammonia, and camphor, with animal food. (Mr. M'Donald, p. 22.)

Give diosma (Buchu) thus: ℞. Infus. diosmæ ℥vij.; sodæ bicarb., potas. bicarb., potas. nitratis āā. ℈ij.; syrup. aurant., ʒvj.; tinct. scyllæ ʒij. M. ℥j. ter die. (Anon. p. 23.)

ASCITES.—Buchu is useful, when given with such other remedies as the case may seem to require. (Mr. Hoskins, p. 23.)

ASIATIC CHOLERA.—This disease is probably "a congestive ague of quotidian type." The collapse is not what is usually understood by that term; it arises from an active cause, from a *spasm of the capillary circulation*, and thus differs materially from the collapse produced by other and more usual causes. This spasm puts a stop to the action of the capillary circulation, and drives the blood into the great interior veins—hence the pain about the precordia, and oppression of the heart, with congestion of the spleen, stomach, &c. Hence the treatment is to relax this spasm of the capillary circulation by *early blood-letting*. If this is done at the commencement of the congestion, it not only relieves the internal veins, but relaxes the spasm. Bleeding, however, must be adopted *early*, and not when the pulse is recovering, nor in the last stage; this would produce fatal collapse. It may seem contrary to all sound practice to bleed thus when the patient is pulseless, but in doing it in the early stage of congestion and collapse, consists the whole success. The medicine most successful is the following: Quinæ disulph. gr. xij. to ℈i.; ferri sulph. gr. ix., acid sulph. dil. ♏ xl. aquæ Oiss.; a wine glass full every quarter of an hour or hour. Do not give diffusible stimulants unless in combination with bleeding, or at the very outset; not after congestion is fully established. Employ cold applications rather than hot ones. (Dr. C. W. Bell, p. 115.)

Use neither internal nor external stimulants, nor artificial heat; but give calomel, and let the patient drink cold water. The first appearance of bile in the ejections from the stomach and bowels, is evidence of recovery. (Mr. M'Coy, p. 130.)—(Dr. King, p. 126.)

"When the regular symptoms peculiar to the severe form of cholera had set in, medicine, I repeat, had very little influence upon it." (Dr. Watson, p. 131.)

Rub the patient well with a preparation of capsicum, over the abdomen, heart, and calves of the legs, several times a day, or at any time when there is coldness of the surface, or spasm; continuing the rubbing each time, till the patient feels the heat intolerable. The advantage of capsicum is that it does not blister. The following preparations may be used: Extract of capsicum made with alcohol, reduced to the consistence of jelly, ʒ iij.: purified lard. ʒ vi.: or concentrated tincture of capsicum, viz., capsicum pods, ℥ iv., rectified spirit, ℥ xij., macerate for a week and strain; two or four grains of delphinia or veratria may be added to this tincture, if thought needful. Or, as a household remedy, boil four ounces of capsicum washed to free it from chloride of sodium, in a pint of olive oil for six hours, and strain; rub with this as above. (Dr. Turnbull, p. 131.)

Reaction takes place from the stage of collapse, by absorption of water into the blood vessels, and by vomiting. The best plan of treatment is to let the patient drink cold water *ad libitum.* (Mr. French, p. 124.)

If the disease commences like common bilious cholera, give acetate of lead and opium, or chalk mixture with opium and aromatic confection; give effervescing draughts with laudanum to allay the vomiting, keep the patient warm in bed, and the next day give a large emollient injection. But if the more severe and characteristic symptoms come on, or if there is great debility from the first, and cramps or coldness of the skin are observed, bleed largely, if the pulse will allow, and give a scruple of calomel with a grain of opium; after twenty minutes, give ten grains of calomel and half a grain of opium. When the calomel has acted well on the bowels, and large quantities of bile have been passed by stool, opium alone may be given, but not till then. If the disease is very far advanced when the patient is first seen, or if the attack has consisted in sudden collapse, almost without cramps, vomiting, or purging, apply stimulant liniments, sinapisms, &c., to the legs and stomach, rub hot turpentine along the spine, or apply a blister to the nape; give turpentine injections or mustard emetics, and *bleed;* giving also internal stimulants, punch, brandy, or carbonate of ammonia. (Dr. Massy, p. 126.)

Fever.—*Typhus.*—In the low forms of fever, camphor, in doses of 3 or 5 grains, is a very valuable remedy, even when there is such cerebral excitement as to indicate local depletion, or when subacute inflammation in the alimentary cavities prevents the use of ordinary stimulants. Give Sir J. Murray's solution of camphor in his fluid magnesia, an ounce of which contains three grains of camphor. Use the same preparation as a lotion to prevent sloughing sores. (Sir Jas. Murray, p. 3.)

Camphor is an excellent remedy, and in low fever it may be given up to fifteen grains three or four times a day, combined with calomel and opium. (Dr. Copland, p. 4.)

When the system is worn out for want of sleep, and when there is much delirium, let chloroform be inhaled to induce sleep. Commence with 10 minims on a little sponge or pocket-handkerchief, and, if necessary, repeat it in a few hours, increasing the dose according to circumstances. (Dr. A. Fairbrother, p. 5.)

Gout.–After cleansing out the bowels with proper aperients, give ten grains of phosphate of ammonia every eight hours, either in simple water, or in infusion of serpentaria with spirit of nitre. Order perfect rest and simple diet; cover the parts with fleecy hosiery and oiled silk; and give an aperient of pil. hydrarg. with pil. rhei. comp. every other night. (Dr. Edwards, p. 16.)

Rheumatism.—Give vinegar in rheumatic and arthritic diseases, under the following circumstances: when the colchico-alkaline treatment fails; when the patient is of middle age and of injured constitution; when there is epigastric pain after eating, foul breath, and fetid eructations; and when the urine is not cloudy; in short, where the disease is owing to a deficiency in the assimilating process and imperfect secretions, give a drachm of acetic acid, with tincture of jalap twenty minims, tincture of orange-peel a drachm, and a little camphor mixture, twice or thrice a day. (Mr. J. C. Atkinson, p. 18.)

Acute.—When there is no cardiac affection, give sulphate of quinine, from fifteen to thirty grains daily, and continue its use for a few days after relief is obtained. (M. Trousseau, p. 17.)

After subduing the more inflammatory symptoms by antiphlogistic treatment, give ten grains of phosphate of ammonia every eight hours. This medicine acts beneficially by decomposing the uric acid or urate of soda, which is formed in excess in gout and rheumatism. Instead of urate of soda, a very insoluble, we have thus formed phosphate of soda, a most soluble salt. (Dr. Edwards, p. 15.)

Chronic.—There is an excess of albuminous compounds in the system, and a diminished quantity of oily compounds: the direct addition of the latter, therefore, seems the most rational method of treatment. Cod-liver oil is to be preferred to other oils, because experience has proved its greater efficacy. (Dr. Hughes Bennett, p. 365.)

To relieve the lameness, employ electro-galvanism. (Mr. Christophers, p. 369.)

SCROFULA.—Give proteine, (prepared by Garden, Oxford-street, London), five or ten grains once or twice a day. (Mr. Tuson, p. 383.)

SCURVY.—Arises probably from a deficiency of potash in the blood, and is to be prevented or cured by the exhibition of some of the salts of potash, or those articles of diet in which these substances are found, as almost all fruits and fresh vegetables, milk, and fresh meat. If medicine is to be prescribed, give 10 or 15 grains of the phosphate, chloride, or tartrate of potash twice or three times a day either in water or with the food. (Dr. A. B. Garrod, p. 9.)

NERVOUS SYSTEM.

CHOREA.—When the case is very violent, give tartar emetic in large doses: to an adult, half a grain every hour, for eight or ten doses, and afterwards at longer intervals. The same treatment may be adopted in some cases of violent cerebral excitement where the tone of the system will bear it. (Mr. Corfe, p. 54.)

DELIRIUM TREMENS.—Often arises from hepatic derangement, and is then to be treated by large and repeated doses of calomel, followed by brisk cathartics; improvement is sure to take place after the passage of a large quantity of dark, offensive bile. The use of opium may be almost wholly abandoned. When there is great excitement, employ cold affusion. In all cases of delirium tremens, however, take care to distinguish between that brought on in regular drinkers when they *leave off* their stimuli suddenly from any cause, and the other kind which is caused by a sudden and violent fit of drinking continued for a few days together. The first kind is from *exhaustion*, the second kind from congestion and even inflammation of the brain. The first kind is the true *delirium tremens*, the second kind may be termed *delirium ebriosorum.* (Mr. Corfe, p. 48.)

The inhalation of chloroform or ether vapour may be cautiously tried, when other remedies fail, in cases of habitual drunkards who have been deprived of their stimuli, or otherwise exhausted. (Dr. Anderson, p. 51.) (Mr. Warwick, p. 52.) (Mr. Hooper, p. 53.)

EPILEPSY.—Relieve all gastric, enteric, and uterine irritations, by emetics, enemata, and emollient vaginal injections; prevent all mental and bodily excitement; do not suffer the patient to sleep too deeply, nor to be suddenly disturbed; and order simple and nutritious diet, cold sponging and friction, and fresh air and exercise. Watch the patient narrowly when an attack is threatened; if the paroxysm approaches, dash cold water in the face: and if the fit comes on raise the head, expose the face and neck to the air, and dash cold water in the face to excite a forcible inspiration, by which the larynx may be opened; apply spirit lotion to the head, and warmth to the feet; and guard the patient against accident. (Dr. M. Hall, p. 31.)

HEADACHE.—The hemicrania often met with in females, during the menstrual periods, arises from ovarian irritation. The treatment is by the daily use of hip-baths or sea-bathing; attention to the state of the rectum; abstinence from stimulants; mental employment; infus. valerian. c. digitalis, with pills of assafœtida; occasional local or general bleeding; or, when these fail, a gentle mercurial action, the cold baths being omitted. Locally, apply belladonna plasters, veratrine ointment, sinapisms, or blisters. When the patient is much exhausted, try a tonic treatment, giving quinine and valerianate of zinc, or when there is chlorosis, sulphate of iron with inf. valerian. For the headache occurring after hemorrhages or debilitating discharges, and often well marked in chlorosis, give steel, alone or combined with quina, and let the patient have full diet, and use the recumbent posture. Distinguish this carefully from *congestive* headache, the treatment of which is to induce reaction as soon as possible by the warm bath or an emetic, and if the headache persists, with hot skin, leeches to the mucous membrane of the nose, (*not* to the temples), blisters and diaphoretics. (Dr. P. Murphy, p. 359.)

HYSTERIA.—When there is violent excitement, employ cold affusion. (Mr. Corfe, p. 58.)

INTOXICATION.—Wash out the stomach thoroughly with the stomach-pump, and inject three ounces of dilute acetate of ammonia draught. (Mr. Corfe, p. 46.)

NEURALGIA.—In cases arising from disordered stomach or bowels, or from exposure to cold, let chloroform be inhaled. It is contraindicated, as is also belladonna, when the neuralgia is owing to, or attended by, cerebral affection. In other words, chloroform will probably be useful when the cause of the neuralgia is *ex-centric*, contraindicated when the cause is *centric*. (Mr. Sibson, p. 55.)

After exhibiting an anæsthetic, apply the actual cautery, heated to whiteness, over the affected part, and then cover it with compresses dipped in cold water. (M. Notta, p. 56.)

Apply electro-magnetism for twenty minutes every day. (Dr. Ranking, p. 57.)

PARALYSIS.—*Loss of Speech from.*—Employ galvano-puncture. Introduce a metallic needle into the neck, directing its point towards the occipital nerve, and connect it with the zinc pole of a voltaic pile; hold the tongue on a sheet of the same metal, and close the circuit by presenting to that organ the knob of a brass director. Give several shocks daily. (M. Camino, p. 62.)

TETANUS.—*Idiopathic.*—Let chloroform be repeatedly inhaled so as to produce sleep for some time. (Mr. W. H. Cary, p. 44.)

Traumatic.—Chloroform may be useful in temporarily relaxing the spasms, and alleviating the patient's sufferings. (Mr. Worthington, p. 53.)

TOOTHACHE.—Apply *carvacrol* upon a piece of cotton, to the carious tooth. (Dr. Bushnan, p. 57.)

Apply to the carious tooth a piece of lint, dipped into a mixture of two parts of liquid ammonia, with one of some simple tincture. (p. 58.)

ORGANS OF RESPIRATION.

APHONIA.—*Hysterical.*—Apply saturated solution of nitre to thick white blotting paper, and when dry, brush it over with compound tincture of benzoin, and repeat the application if necessary. When thoroughly dry, cut into slips, three inches by one and a quarter. Let one be lighted and the fumes inhaled every night. (p. 105.)

ASTHMA.—*Spasmodic.*—Let chloroform be inhaled. (Mr. Chandler, p. 104.)

BRONCHITIS.—*In Children.*—In a mild case, give James's powder with a little calomel and ipecacuanha every four hours, and when, as perhaps in twenty-four or thirty-six hours, the child is relieved, omit the calomel, and give small doses of antimonial and ipecacuanha wine in a mixture. In severer cases, where the child is strong, apply leeches beneath the scapulæ; give an emetic dose of tartarized antimony, and then by repeated doses keep the child under its influence for a day or two. Be very careful, however, not to depress too much by the use of antimony, which is not borne so well by children as adults: when the medicine ceases to vomit, or is merely regurgitated without effect, and especially if the face should be livid or the pulse faltering, discontinue the use of this medicine, or give it at longer intervals with ipecacuanha in an emetic dose. Emetics are of great use, especially in the evening exacerbation of the disease, and in the morning, when the bronchi have become filled with mucus. Nervous dyspnœa may be relieved by a mustard poultice, and the hot or warm bath according to the strength of the patient. If the disease becomes chronic, give tonics, especially the extract of bark, apply a stimulating liniment to the chest, and give an emetic of ipecacuanha every night; or if there is much secretion, give decoction of senega, with ammonia and tincture of squill. (Dr. C. West, p. 92.)

CORYZA.—*Of Children.*—In the *simple* coryza, no treatment is required beyond giving a mild diaphoretic with a little vin. ipecac. attending to the state of the bowels, and preventing the accumulation of the secretion at the opening of the nostrils. If there is much difficulty in breathing, do not let the child attempt to suck, but feed it with mother's milk by means of a spoon. In the *malignant* variety of the disease, keep up the strength by tonics and nutriment, and inject a lotion with a drachm of alum to two ounces of water, or three grains of nitrate of silver to an ounce of water, into the nostrils, or apply it to the throat. If a mild catarrh continues long, it is probably syphilitic, and requires small doses of hydr. c cretâ. (Dr. West, p. 75.)

CROUP.—*Membranous or Inflammatory.*—Bleed freely, and at the earliest possible period; open the jugular vein, and take about three ounces from a child between one and two years old, and six ounces from a child from eight to ten. Then give emetic tartar, an eighth, a quarter, or half a grain every ten minutes, till vomiting is produced; then similar or increased doses every half hour, till *decided* relief is afforded. If this effect does not take place in four or six hours, apply leeches to the top of the sternum, or near the larynx, and afterwards apply a blister to the throat. But if the croupal symptoms have abated, give the antimony at longer intervals, e. g., a full dose every hour or two, then every three, four, or six hours, remembering that emesis and not nausea is to be sought for. Mercurial inunction should have been employed every two or three hours from the first, and now calomel may be given; to children from two to five years old give half a grain or a grain every hour or two, with a little ipecacuanha, interrupting its use occasionally by an antimonial emetic. If the antiphlogistic treatment is forbidden by symptoms of sinking, cold skin, livid lips, and feeble pulse, while the breathing is still stridulous, place the child in a hot mustard bath for a few minutes, and give a quarter or half a grain of sulphate of copper, dissolved in water, every quarter of an hour till free vomiting is produced. And get the child under the influence of mercury as soon as possible, by rubbing a drachm of strong mercurial ointment into the thighs every two hours, and giving a grain of calomel every hour to a child two or three years old. If there is profuse diarrhœa, omit the calomel and rub in more frequently. Support the strength by beef tea; and give stimulant expectorants, as decoction of senega with carbonate of ammonia and tincture of squill, every two hours. (To conceal the pungency of the ammonia, sweeten the medicine with treacle or sugar, and mix with one third of milk.)

When croup occurs during the progress of measles, it will not bear active antiphlogistic treatment. Give emetics of tartar emetic, ipecacuanha, or sulphate of copper, according to circumstances. Apply frequently to the fauces, solution of nitrate of silver, a scruple to the ounce; or if there are sloughy ulcerations, apply strong hydrochloric acid, diluted with twice or thrice as much honey. Apply a mustard poultice to the throat; give calomel, or if there is diarrhœa, rub in mercurial ointment, and give decoction of senega, with carbonate of ammonia. [In giving large doses of tartar emetic to children, the greatest caution is necessary. Its effects when given rapidly seem cumulative; in children, therefore, under two years old, avoid it if possible, or never trust its exhibition to a mother or nurse; its effects should be *watched* attentively by the medical man himself, who ought to have ammonia or chloric ether ready to administer if the prostration be extreme.—Ed.] (Dr. C. West, p. 77.)

Spasmodic.—Give emetics of ipecacuanha to infants, or tartar emetic to older children. During the paroxysm, place the lower extremities in a hot bath, and dash cold water on the face; and tickle the fauces to excite vomiting. The intermediate or prophylactic treatment must depend upon the nature of the exciting cause. If this depends on teething, lance the gums; if on improper food, as in children brought up by hand, ascertain what kind of food best suits the infant. Two parts of milk and one of barley water, sweetened with loaf sugar, or equal parts of milk and a thin solution of isinglass often agree well; so does asses milk. But a return to the breast is sometimes absolutely necessary. If the bowels are constipated, regulate them by mild aperients, as castor oil, or a decoction of aloes well sweetened with liquorice, or a little powdered aloes mixed with coarse sugar and placed on the tongue, or a liniment of equal parts of lin. sapon. and tr. aloes, rubbed on the abdomen twice a day, or a small soap suppository every day, or enemata of warm water or gruel. If there are severe cerebral symptoms, let the head rest on a horse-hair cushion with a hole in the centre, use the tepid bath, give neutral salines with small doses of hyoscyamus, or occasionally even apply a leech to the head. (Dr. West, p. 83.)

Hooping Cough.—In the *first* stage, keep the child in a mild dry atmosphere, and let it have light diet. If there is much cough, give small doses of ipecac. or ant. tart.; and if much wheezing, an ipecacuanha emetic every evening. In the *second* stage, if there is little the matter except the paroxysmal cough, give hydrocyanic acid, half a minim every six hours for a child nine months old, in a little sweetened distilled water. But discontinue it if the child appear faint or dizzy after its administration; and never persevere with it, if good is not done within three or four days. If there is much fever and a short hacking cough, give small doses of ant. tart. or vin. ipecac. with the hydrocyanic acid; and if much wheezing, give an emetic of ipecacuanha, once or twice a day. If there are symptoms of cerebral congestion, apply a few leeches to the head. If there is much dyspnœa, rub the chest and spine with Roche's embrocation, or soap liniment with tinct. lyttæ. Should the fever and dyspnœa suddenly increase and seem to indicate inflammation of the lungs, do not deplete or give large doses of tartar emetic, except on the positive evidence of auscultation; and even then remember that much of the dyspnœa may be due to the increased irritability of the spinal system. Abstract blood very cautiously; give small doses of nitre, ipecacuanha, and James's powder, rather than tartar emetic; give an ipecacuanha emetic once or twice a day; apply mustard poultices to the chest; and if the paroxysms of cough are severe, combine hydrocyanic acid with the other remedies; and if there is sinking, and the expectoration ceases, while the bronchi are still loaded, give senega, with ammonia and squills, and nutritious diet. In the *third* stage, recommend change of air. If the skin is cool and the tongue moist, and there is much bronchial secretion, give three or four grains of alum every four or six hours, to a child a year or eighteen months old. If there are dyspeptic symptoms and loss of appetite, give small doses of hydrochloric acid. If the cough is frequent, while the only constitutional symptoms are those of weakness, give iron. While, if iron is contraindicated by feverishness, or gastro-intestinal disorder, Battley's liquor cinchonæ, with small doses of hydrocyanic acid will do good. (Dr. C. West, p. 84.)

Laryngitis.—*Acute.*—Besides the ordinary treatment by leeches and tartar emetic, if there is œdema of the epiglottis, (indicated by there being difficulty in swallowing, and a sensation of a swelling in the throat, without affection of the tonsils), blow powdered alum into the throat, through a quill. (Dr. T. O. Ward, p. 76.)

Œdema, *Of the Lungs.*—Occurs chiefly as one of the complications of that acute anasarca which often follows scarlatina, and is very dangerous. Bleed freely, and give large doses of tartar emetic. If the extremities are very cold and the surface livid, apply a large mustard poultice over the chest, and give a large dose of nitrous ether every two hours, till the patient rallies sufficiently to bear bleeding. Afterwards treat the general dropsy. (Dr. West, p. 104.)

Phthisis.—In tubercular diseases, the albuminous compounds are in excess in the economy, while the oily compounds are diminished. The most rational method of treating this state, especially as the assimilating organs are generally in a feeble condition, is by the direct administration of an animal oil; and experience points to cod-liver oil as the most practically useful. (Dr. Hughes Bennett, p. 365.)

Pleurisy.—In young and healthy adults, bleed in a very "determined manner and with an unsparing hand, until an impression is made on the system, until the pain and difficulty of breathing are removed, until the patient can draw a full breath, or faints;" and repeat it every three or four hours, according to the symptoms, not placing, however, much dependence upon the pulse. And give mercury to affect the gums; three grains of calomel with a third or half a grain of opium, every two or three hours. In the later stages, when the pulse is becoming weak, and there is much dyspnœa, or when the disease is becoming chronic, apply a blister. (Mr. Guthrie, p. 102.)

PNEUMONIA.—When occurring in young subjects of a healthy constitution, and combined as it usually is, more or less, with pleurisy, bleed promptly and freely, till the patient faints, and repeat it every four hours or oftener. And give tartar emetic, half a grain or a grain, every two hours, and even up to 12 or 20 grains a day. But in the stages of hepatization and infiltration, or when there is from the first irritation of the bowels, or abdominal tenderness, substitute calomel, given so as to affect the gums. Blister in the later stages of the disease, and when the pulse becomes weak, while there is great dyspnœa. (Mr. Guthrie, p. 102.)

In Children. — In *idiopathic* pneumonia occurring in previously healthy children, depletion is as important as in the adult; and is to be followed up by tartar emetic, given in doses of one-eighth of a grain every ten minutes, (to a child two years old), till vomiting is produced, and continued every hour or two afterwards for twenty-four or thirty-six hours. Then if the physical condition of the lungs, and the general state of the patient, are found greatly improved, persevere with the medicine at longer intervals; but if the signs of inflammation are advancing, give mercury with small doses of antimony, and use larger doses of the latter to combat any sudden increase of fever or dyspnœa. If under any circumstances bronchial breathing is distinctly audible, the mercurial treatment is indicated; give, to a child two years old, a grain of calomel every three or four hours, and a little tartar emetic, except contra-indicated by sickness or debility; if the stomach and bowels are very irritable, use mercurial inunction. Do not blister, but employ stimulating liniments, by which there is no risk of those unhealthy sores which often follow a breach of the surface. If at the outset, large doses of antimony do not seem to be required, give two-thirds of a grain or a grain of calomel with two or three of James's powder every six hours. It is difficult to know when to give stimulants; but they are plainly indicated when there is much diarrhœa, the pulse becoming more frequent, and above all smaller and smaller, and the respiration, though slower, more laboured and irregular. Then give wine, even to a child at the breast, and ammonia in decoction of senega, or dissolved in milk, which conceals its pungency. If there is diarrhæa, let the nutriment be arrow root, or the *decoction blanche* of the French; otherwise give strong beef tea, or veal broth. In *secondary* pneumonia, especially if preceded by well marked bronchitic symptoms, antimony may sometimes be given at once, without bleeding. (Dr. West, p. 99.)

ORGANS OF DIGESTION.

ASCARIDES.—Give camphor in three or five-grain doses: a convenient form is Sir James Murray's solution of camphor in his fluid magnesia. (Dr. Copland, p. 5.)

Or the same preparation may be given in the form of enema. (Sir J. Murray, p. 4.)

CONSTIPATION.—When dependent upon loss of tone in the muscular fibres of the bowels, give acetate of lead three grains, with one-sixth of a grain of acetate of morphia, every four hours, and a turpentine enema every evening; or sulphate of zinc with opium may be tried. (Dr. J. C. Baddeley, p. 134.)

When there are hard impacted fæces, give eight grains of inspissated ox-gall thrice a day, and enemata of diluted gall to the amount of two quarts, night and morning. (Dr. E. Vanderpool, p. 135.)

FISTULA IN ANO.—Abscesses in the ischio-coccygeal space very frequently lead to fistula in ano, if they are not its constant cause. Transfix them with a bistoury as soon as ever they are detected. (Mr. J. P. Vincent, p. 214.)

FLATULENCE.—Ascertain whether it is accompanied by inflammatory irritation of the stomach and duodenum, or by debility of those organs. If the former, try ipecacuanha, sulphur, tartarized antimony, mercurials, magnesia, iodine, or nitrate of silver; or if there is torpor of the liver, give wine of colchicum with sulphate of potash or carbonate of magnesia,—or give infusion or tincture of arnica, or powder or extract of cusparia. If debility seems to be the cause, let the patient use freely any of the carminative waters, with bitters, and valerian, castoreum, and camphor. Or give enemata of oil of turpentine or assafœtida, which for expelling flatus from the bowels, are better than anything else, except perhaps the infusion and spirit of armoracia. (Dr. Dick, p. 133.)

In flatulent distention of the bowels, arising from want of tone in the muscular fibres, give acetate of lead, three grains, with one-sixth of a grain of acetate of morphia every four hours, and a turpentine enema every night. (Dr. J. C. Baddeley, p. 134.)

GASTRALGIA.—*Chronic.*—Give a teaspoonful of the following mixture immediately after each meal: acetate of morphia, one grain; distilled water, thirty drachms; syrup, nine drachms. (M. Valleix, p. 108.)

HERNIA.—*Strangulated.*—Whenever there is any suspicion that the bowel or omentum is in a state of gangrene, the sac must certainly be opened, otherwise the division of the stricture external to the sac (Petit's operation) should be practised. (Dr. Duncan, p. 201.)

Perform the operation external to the sac wherever it is admissible, and when it is necessary to open the sac, let the opening be of small size. In *inguinal* hernia, divide the skin and fascia only over the neck of the sac, making the seat of stricture the centre of the incision: if the neck of the sac is the seat of stricture, scarify it so as only partially to divide it, and so that it may yield to the application of taxis. In *femoral* hernia, also, interfere as little as possible with the tumour: let the centre of the perpendicular incision be between the upper part of the tumour and the abdominal surface, and thus reach Poupart's ligament by carrying the finger from above downwards, and divide the stricture on a director introduced into the femoral ring. This operation is not so applicable in umbilical hernia. (Mr. Luke, p. 202.)

(Mr. Hilton agrees with Mr. Luke as to the excellence of Petit's operation. In femoral hernia, he advises a short vertical incision of the skin, or, if the tumour is large, a semilunar one, with the convexity downwards. p. 203.)

(Mr. Quain also agrees with Mr. Luke. p. 204.)

The muscles being relaxed by position, apply *steady, gentle, and gradually increasing pressure* with the hands for an hour or two, should so long a continuance of it be requisite. (Mr. Hunt, p. 205.)—(Mr. Pope, p. 206.)

Administer chloroform. (Mr. Lafargue, p. 207.)

Administer chloroform during the operation. (Dr. Hughes, p. 207.)

In operating for hernia, after determining the seat of stricture, instead of cutting down on the tumour, make the incision directly over the part where the stricture will have to be divided. Thus not only will the sac not be opened, but the tumour not interfered with. The method is applicable to hernia of all species. But whenever organic disease exists, open the sac and leave a free passage for discharges. (Mr. Gay, p. 209,)

Mr. Gay's method answers well in umbilical hernia; the incision of the skin need only be very small. (Mr. Child, p. 209.)

Mr. Gay's operation is of great utility, especially in umbilical and femoral hernia. In cases of the latter kind, there is a triangular space on the inner side of the hernia, having the sac for its external boundary, and a line drawn from the spine of the pubes to the saphenous opening, internally. Cut into this space midway between these marks, feel with the point of the finger for the crescentic edge of the crural opening, and divide the stricture with Turner's knife directed upwards and inwards. (Mr. Coulson, p. 203.)

HÆMORRHOIDS. — *Internal.* — Excise the piles, not including any part of the membrane round them, even if there is prolapsus, and inject small quantities of a solution of sulphate of iron, a grain to the ounce, which will completely restrain the bleeding. (Mr. J. P, Vincent, p. 210.)

Apply a strong ligature round the base of each tumour, embracing as much as possible of the mucous membrane; hold them tightly for about twenty minutes, and then remove the ligatures and return the parts. Afterwards give an anodyne every night, and an aperient every third day. (Mr. Taylor, p. 211.)

Ileus.—After the first day or two, avoid all active purgatives. (Drs. Copland, Bright, and Todd, p. 197.)

Give a teaspoonful of sweet oil several times a day. (Dr. Copland, p. 197.)

In regard to operative measures, a case of ileus is hopeless at the time when an operation would be justifiable. (Mr. Travers, p. 198.)

There are cases in which recourse to operation is justifiable; but the establishment of artificial anus is the only practicable result, when the case does not prove fatal. (Mr. B. Phillips, p. 195.)

The operation ought to be more frequently resorted to, since, in the majority of cases, it cannot make matters worse than they are, while it is likely to be successful, if a correct diagnosis can be made. This may be done almost with certainty, when the obstruction arises from "dislocation of the sigmoid flexure." (Mr. Mackenzie, p. 199.)

Œsophagus, *Foreign Bodies in.*—A fish hook which had got fixed in the œsophagus, was extracted by piercing a pistol bullet, putting it on the line and allowing it to slip down; its weight removed the hook, the point of which sticking into the lead, it was safely brought up. (p. 384.)

Prolapsus Ani.—Keep the patient in bed, and daily after cleansing the bowel out, let a small quantity of solution of sulphate of iron, a grain to the ounce, be injected and retained. If the stomach will bear them, give balsams. (Mr. J. P. Vincent, p. 210.)

Apply a ligature round a portion of the mucous membrane, for about twenty minutes, and then release it. Give then an anodyne every night, and an aperient every third day, the bowels being kept confined in the meantime. Afterwards the rectum pessary may be used for five or ten minutes after each motion. (Mr. Taylor, p. 211.)

Sea-Sickness.—As preventives, use active exercise and a tonic regimen for some days before embarkation; and when on board, keep on deck in the breeze, make large inspirations, wear a girdle, walk quickly till perspiration or fatigue is caused, or engage in some hard work, such as helping the sailors, hard work being the surest prophylactic; and take warm and exciting drinks, as tea or coffee with a little brandy, or diaphoretic medicines, opium, saffron, or acetate of ammonia. When the sickness has come on, nothing will do except palliatives: lie down with the head low, in a hammock or a suspended bed, and take stimulant aromatics, lemons, &c. (Dr. F. W. Fisher, p. 375.)

RECTUM, *Irritable Ulcer of.*—Pass the forefinger of the left hand up the rectum, and direct a straight probe-pointed bistoury along it, beyond the very extremity of the fissure; then divide the ulcerated surface, and the fibres of the sphincter which are connected with it. In the after-treatment, advise the patient to get the habit of evacuating the bowels at bed time, instead of in the morning. (Mr. B. Cooper, p. 213)

TONSILS, *Chronic Enlargement of.*—Apply nitrate of silver, either the solid caustic, or a solution gradually increased from three grains to two drachms to the ounce of water; paint the tonsils twice or thrice at one sitting, and then let the mouth be well washed with water. Make the application every two or three weeks. (Dr. Naudin, p. 107.)

VOMITING, *Of Pregnancy.*—Vide "Pregnancy."

URINARY ORGANS.

CHANCRE.—Use at first local emollients and baths; and when the syphilitic character of the ulcer is manifest, give diaphoretic drinks of decoction of sarsaparilla, or guaiacum, and then give the preparations of iodine, and use them externally in the form of local baths and fomentations. (M. Sisovics, p. 231.)

DIABETES.—The quantity of urine has been found to diminish under the use of spirit of turpentine, or of Chio turpentine. (p. 145.)

GONORRHŒA.—During the first few days, employ the abortive treatment. The patient having passed water, inject into the urethra a little of a solution of nitrate of silver, fifteen grains to the ounce, from a glass syringe; the only precautions needed are to press the lips of the meatus so as to bring them in close contact with the pipe of the syringe, and to make the injection pass suddenly, so as take the urethra by surprise. Repeat the injection at the end of two days; but if the first application does not cause pain and sero-sanguineous discharge, followed by creamy suppuration, repeat it on the same day. At the same time give copaiba and cubebs. (M. Ricord, p. 228.)

During the first few days employ emulsions, local and general baths, and other antiphlogistic treatment. And when the inflammatory symptoms subside, give balsam of copaiba, with an equal quantity of nitric acid, in doses of twenty drops in water, gradually augmented; or give the balsam in pills, or emulsions. (M. Sisovics, p. 231.)

LITHOTOMY.—Employ a staff bent at a right angle three inches from the point, this horizontal branch having a lateral groove with a posterior opening; and a knife with a cutting edge as long as the groove of the staff, the back straight, and the blade of uniform breadth as far as the point, which should be shaped like that of a scalpel, but fitted to stab as well as cut. Let the upper part of the pelvis be raised by a pillow under the loins, so as to make the lower brim look obliquely downwards, and let the bladder contain very little urine. Having introduced the staff, feel with the left forefinger in the rectum for the horizontal branch of the staff lying over the prostate, and move it backwards and forwards till the orifice of the groove is made to project in the perineum, just at the anterior verge of the anus. Keep it steady in this position by means of the forefinger placed within the rectum, and the thumb pressing on it externally, and commit the staff to an assistant with directions to keep it in the same position, pressing it down moderately upon the finger. Then with the knife held in the right hand, with the blade horizontal and the edge turned to the left side, penetrate through the skin and other tissues till the point is felt to be within the groove, and carry it directly onwards till arrested at the termination of the groove; then withdraw the knife, cutting first three quarters of an inch outwards and downwards, and then three eighths of an inch almost directly downwards. Without moving the staff, pass the finger into the bladder, and ascertain the size of the stone. If a more ample incision is needed, shift the staff a little to the left, and pass the knife, or a probe-pointed bistoury, on the right side of the staff, and on the top of the horizontal branch, into the bladder; and guarding the point by the finger of the right hand within the bladder, make the blade advance a little to the right by a sawing motion, taking care not to make the external incision unnecessarily large. Introduce the forceps and seize the stone before the staff is removed, (Dr. Buchanan, p. 217.)

PHYMOSIS.—Hold the prepuce firmly between the blades of a fenestrated forceps, and pass five or six sutures through the fenestra, and consequently through the prepuce, and then shave the latter off with a bistoury close in front of the forceps. Withdraw the latter carefully, divide the threads which pass above and below the glans, in their centre, so that there will be twice as many sutures as there were threads passed. Then tie the respective ends of the sutures so as to bring the skin in contact with the mucous membrane. M. Ricord, p. 223.)

RETENTION OF URINE.—In both sexes the use of the catheter may often be avoided by the application of large cupping glasses to the superior and internal part of the thigh. (M. Vandenbroeck, p. 224.)

SPERMATORRHŒA.—When arising simply from debility, as it may do in persons of lymphatic temperament, and who have suffered in childhood from incontinence of urine, give tonics, as the ferruginous waters, use the local douche followed by friction, or transmit galvanic shocks through the penis and perineum; warm aromatic baths, ergot of rye 4 to 20 grains, night and morning, or small doses of copaiba or turpentine are sometimes useful.

When from great nervous susceptibility of the organs, give narcotics and sedatives, as camphor in 5 or 6 grain doses, and introduce every few days a medium-sized gum catheter, and allow it to remain for an hour or more, or practise acupuncture of the perineum. When dependent upon a sub-inflammatory condition of the orifices of the ducts, use tepid baths, give milk diet and light regimen, apply nitrate of silver to the parts, *sec. art*, and let all exercise of the organs be abandoned. (M. Lallemand, p. 224.)

BONES AND JOINTS.

Arthritis, *Chronic.*—Rub the joint once a day with an ointment composed of five parts of nitrate of silver to thirty-two of lard, and apply a poultice. Continue this treatment until the disappearance of pain. (M. M. Guerard and Briquet, p. 154.)

Caries.—Give proteine (prepared by Garden, Oxford Street, London,) five or ten grains once or twice a day, either as a dry powder or upon bread and butter. (Mr. Tuson, p. 383.)

Dislocations.—Old dislocations may be successfully reduced by proper management, even when alteration has begun to take place in the form of the bones. The proper method is to make gentle extension every day for a few weeks, so as to loosen the attachments of the artificial joints, and lengthen the muscles, nerves, vessels, and ligaments; so that when the final pull is given, there may be no risk of laceration. When this has been carried sufficiently far, reduce the dislocation, and keep the parts tied up for a fortnight or thereabouts; then employ passive motion. (Dr. J. Stark, p. 151.)

Administer chloroform before making the reduction. (Mr. W. B. Page, p. 152.)

Fractures.—After rest has been employed for a certain time, it is often advisable that the muscles should be used, and some weight thrown upon the injured limb, as the best way to induce ossific deposit; the broken bone being of course protected by well adjusted splints. (Mr. B. Cooper, p. 147.)

Knee, *Luxation of the Semilunar Cartilage of.*—Place the patient on the affected side, with the limb bent, and then gently rotate the tibia on its axis, when the cartilage will slip into its place. Or it may spontaneously slip into its place during sleep. (Mr. Vincent, p. 152.)

Loose Cartilages.—Endeavour by careful manipulation to expel the cartilage from the field of motion, and prevent its return by a proper knee-cap. If the operation for radical cure is determined upon, it is best performed at twice. Press the loose body to the outer side of the joint, between the patella and external condyle, and keep it steadily in that position; insert a narrow-pointed bistoury under the skin at some distance, and press it onward till it reaches the loose cartilage; then turn the cutting edge of the knife towards the joint, and divide the synovial membrane to a sufficient extent, and force the loose cartilage into the subcutaneous cellular tissue. Withdraw the knife, and apply white of egg over the incision, and then a strip of plaster; put a splint behind the joint, to insure perfect rest, and apply evaporating lotion; and combat the slightest symptom of inflammation upon its first appearance. When the wound in the joint is healed, remove the loose cartilage by an incision through the skin. (Mr. B. Cooper, p. 154.)

Mollities Ossium.—Supply the wanting mineral ingredient, by giving *bone* powdered and mixed with bread, and at the same time draughts containing phosphoric acid, to convert the phosphate of lime into a more soluble salt, the biphosphate. (Mr. B. Cooper, p. 148.)

Spine, *Distortions of.*—Endeavour to improve the nutrition of the bones, by the use of articles of diet containing a good deal of phosphate of lime, as beef and mutton, giving at the same time phosphoric acid, to render the salt of lime more soluble. Bottled porter will also do good, if it do not relax the bowels. Support the weight of the trunk by the simplest possible mechanical means, and put into gentle action such muscles as may counteract the unnatural direction the bones have acquired. Let such exercise in the open air be taken as causes the least fatigue, as riding in an open carriage, or sailing on the sea. (Mr. B. Cooper, p. 148.)

Synovitis.—*Gonorrhœal.*—Restore the gonorrhœal discharge by the application of warm fomentations over the genitals; and give bark and alkalies, combined with opium. (Mr. B. Cooper, p. 155.)

EYE AND EAR.

Cornea, *Sloughing of, from Defective Nutrition.*—Give wine and beef-tea, with bark, quinine, or steel; and attend to the bowels. (Mr. Bowman, p. 249.)

Corneitis.—Generous diet, pure air, and comfortable clothing are generally required. As to local applications, apply none whatever in the early stage, except a tepid or slightly sedative lotion, to allay the pain. When the disease has become chronic, such stimulant applications as vinum opii, or solution of nitrate of silver, may be used, but very cautiously. Dilate the pupil occasionally by belladonna, either by applying the extract to the eyelids and brow, or by applying occasionally a piece of rag dipped in a solution of a drachm of good extract in eight ounces of water. Apply stimulants for the dispersion of the diffused opacity of the cornea which remains, but not till all inflammatory action has long disappeared. Solutions of nitrate of silver, sulphate of copper, or sulphate of zinc, will do; or a solution of iodide of potassium, ten grains to the ounce; or a camel-hair pencil dipped in water, and brushed two or three times on soap. (Dr. Jacob, p. 251.)

Deafness, *occurring in Scarlatina and Measles.*—Rub the fauces well with a smooth piece of alum twice a week, occasionally alternating it with nitrate of silver, solid, or in solution; cleanse the external meatus once a day with warm brandy and water, or a solution of iodine, or decoction of the bark of prinos verticillatus; keep blisters constantly discharging, placed behind the ears or on the arms, alternately; and give internally the muriate of lime, or iodine and its preparations, or syrup of sarsaparilla made after the old formula, to which may be added the root of rumex crispus, and the tinctures of the bark of prinos verticillatus and chymaphila umbellata. (Dr. Morrel, p. 256.)

Iritis, *Rheumatic.*—In the active form, abstract blood, purge, and attend to the function of the skin. Follow these measures by the administration of tonics, otherwise a tedious subacute stage will follow. On the slightest appearance of fibrinous effusion give mercury; and blister for opacity of the cornea. (Mr. J. Dixon, p. 253.)

Myringitis, *Subacute.*—Give mercury so as to produce a steady and gradual effect, and keep the mouth sore until there is a decided amendment; give the preparations of iodine; and apply counter-irritation over the mastoid process. If there is ulceration, touch the part daily with a solution of lunar caustic. To relieve the tinnitus aurium, give tincture of the flowers and leaves of arnica, beginning with fifteen drops of the tincture in a tablespoonful of infusion of arnica, with a little cordial tincture, thrice a day; gradually increasing the dose to thirty drops, unless headache or giddiness be produced, when the medicine must be discontinued. And for the arrest of secretion of the cerumen, apply the soft brown citrine ointment, in a melted state, to the external meatus, with a soft brush. (Mr. Wilde, p. 255.)

Ophthalmia, *Gonorrhœal.*—Keep the patient quiet, and in the dark, with the head raised, and give very low diet. Apply nitrate of silver to the affected surfaces, so as to produce a white film, and then wash the eye sedulously with warm water, and apply poppy fomentations. Repeat the cauterization thrice a day, or as often as the secretion, which was changed in character by the application, has again become purulent. Stop chemosis in the early stage, by first cauterizing, and then removing a portion of conjunctiva with curved scissors. If the chemosis reaches the phlegmonous state, scarify, but do not attempt to excise it. Apply leeches behind the ears, or in the course of the jugular; or if there is much febrile action, bleed from the arm.

Do not use mustard pediluvia. In the decline of the disease, apply blisters to the nape, and use mercurial frictions. (M. Ricord, p. 247.)

Purulent, of Infants.—Lay the child on a table, and allow water to flow from a small tap through a tube over the surface of the eye during from ten to fifteen minutes, several times a day.—(M. Chassiagnac, p. 248.)

Scrofulous.—Apply solution of nitrate of silver, (a scruple to an ounce of water), to the mucous membrane of the nostrils, at first every day, and afterwards every other day, or twice a week. (Dr. Edwards, p. 253.)

The nitrate may be applied to the mucous membrane of the nostrils either in substance, or solution, or ointment; for the first week, night and morning; then every day; and afterwards, every second or third day. After cauterization, let the patient inspire deeply, to make the effect of the caustic as extensive as possible. (M. Morand, p. 253.)

TARSAL TUMOURS.—Use a pair of forceps with one blade ending in a ring, and having a screw to fasten the blades together. Slip the ring portion beneath the lid so as to encircle the tumour, screw the blades together with the necessary degree of firmness, and evert the lid. Open the sac freely, and turn out the contents with a small silver spatula, or a Davielle's scoop; then apply a fine probe coated with nitrate of silver, over the interior, smear the surface with a little oil, restore the portion of the lid, and take off the forceps. (Mr. W. R. Wilde, p. 382.)

SKIN AND CELLULAR TISSUE.

BEDSORES.—In order to prevent bedsores, moisten and oil a bladder, and partially distend it with air; wrap it up in a soft napkin, and place it under the part subjected to pressure. In the case of fractures, to preserve the heel from the effect of pressure, a bladder may be introduced beneath it in a flaccid state, and then inflated. (Dr. Purefoy, p. 377.)

BUNIONS.—The only successful treatment is to restore the great toe to its natural position, parallel with the others. This is best done by wearing a stocking with a compartment like the finger of a glove, to receive the great toe, and a shoe with a similar compartment constructed in its inside. Local antiphlogistic treatment may in the first instance be required. (Mr. B. Cooper, p. 156.)

BURNS.—To those of the first degree, if not extensive nor occurring on the head and face, use cold applications; otherwise, apply flour or carded cotton, and let the dressings remain as long as cleanliness and the patient's feelings will allow. Treat burns of the second degree in the same way, previously making a minute puncture into any large vesicles. When of the third and fourth degree, apply lime-water and oil, poultices, or turpentine liniment, and afterwards calamine cerate; and when the granulations are high, apply nitrate of silver, or strap with adhesive plaster, or sprinkle the surface with a powder of myrrh and calamine. The great point is to cover the parts well, to remove the dressings as seldom as possible, and when removing them to expose but little surface to the air at a time. During the stage of shock, give opium and stimulants, and apply warmth (to children in the form of bath); when reaction comes on, antiphlogistic treatment may be needed, but still opium is useful; and when there is profuse suppuration, bark with acids, opium and wine, with attention to the bowels, are indicated. (Prof. Cooper, p. 237.)

To slight burns, cold applications, flour, or cotton, are equally useful. To more severe ones apply lawn paper dipped in warm turpentine thickened with ung. resinæ; where there is free suppuration, use chalk ointment; and when the healing process goes on very slowly, apply a lotion with camphor mixture one pound, tincture of opium and solution of lead, each one drachm. Never apply escharotics. When the injury is so severe as to forbid all hope of recovery, envelope the entire person in cotton, as the most comfortable and convenient application. During the stage of shock, give stimulants and opiates; afterwards liberal diet and quinine. (Mr. T. M. Greenhow, p. 239.)

Apply flour of the *best* quality with a "dredger," and allow it to "cake"; when detached, repeat the process till a healthy surface is left. When the burn is on the back, keep the flour in apposition by means of long flakes of carded cotton applied round the waist. Treat the ulceration remaining after severe burns by cer. calaminæ, except on the hands and face, where the use of flour may be continued. (Mr. Dorning, p. 241.)

Apply the best flour with a dredger, as above described, and when the caked masses come off, apply wetted lint and oiled silk. If cicatrization is tardy, use a weak solution of sulphate of zinc, instead of water; and if there are exuberant granulations, rub them lightly with a piece of sulphate of copper. Muriate of morphia is the best anodyne. (Mr. Liston, Dr. H. Barker, p. 242.)

Make the surface as clean and dry at possible, remove any vesications or loose cuticle; then apply, with a small sponge secured to the eye of a silver probe, a concentrated solution of nitrate of silver, (arg. nitr. ℈iv., acid. nitric. gtt. vj., aq. distil. ʒiv.) so as to form an adherent eschar. If on the back, after applying the nitrate, cover with plasters of ung. plumbi comp., and dress every third or fourth day. Re-apply the nitrate, if the eschars fall off too soon. (Mr. Higginbottom, p. 242.)

Cotton wool is more useful than flour. (Mr. Newnham, p. 244.)

In treating burns by cotton wool, *never remove* that which covers the surface of the sore. (Dr. G. Black, p. 244.)

Chilblains.—When of the first and second degree of severity, rub well with any of the following liniments:—Camphor liniment; soap liniment five parts, tinct. cantharid, one part; liq. plumbi diacet.; sp. vini camph. two parts, liquor plumbi diacet. one part. To ulcerated chilblains apply stimulating dressings, as Peruvian balsam, solution of nitrate of silver, or of chloride of lime (Lisfranc), or a mixture of liquor calcis and liquor plumbi diacetat. Treat gangrenous chilblains like other cases of gangrene. (Mr. S. Cooper, p. 247.)

Erysipelas, *Traumatic.*—Bloodletting can very rarely be borne; leeches are inadmissible from the irritation which their bites sometimes produce; and cold must never be applied in erysipelas of the head or face, for fear of producing fatal metastasis. The only remaining antiphlogistic plan is to act upon the secretions. For this purpose give the following medicines:—℞. Hydr. chlorid. gr. iss.; pulv. Jacobi ver. gr. iij. M. ft. pil.; and ℞. Magnes. carb. gr. x; sodæ sesquicarb. ℈i.; vin. ipecac. ʒss.; mist. camphoræ ℥i. M. to be taken twice or thrice a day with a spoonful of lemon juice. If the symptoms are typhoid, substitute ammonia for the soda. Porter, and generous support must be allowed; and, if there is much debility, wine or brandy. If there is much tension of the skin, puncture it, but do not make long incisions, unless there is extensive cellular sloughing. If the inflammation has great tendency to spread, apply lunar caustic or mercurial ointment round its borders. (Mr. B. Cooper, p. 245.)

Ganglion.—Pass a couching needle beneath the skin at some distance from the ganglion, puncture the sac in several places, and squeeze out the contents into the cellular tissue; then apply pressure, and adjust a splint, to insure perfect quiet. Small ganglia upon the palm may be punctured directly. (Mr. B. Cooper, p. 156.)

Gangrene, *Hospital.*—Distinguish from sloughing phagedæna, in which the sore appears similar, but which only occurs in isolated cases, and is almost confined to the lowest prostitutes. Separate the patients from one another, and if possible from the rest of the hospital. Apply undiluted nitric acid to the surface and edges of the sore, and a charcoal or common poultice. Give large doses of opium; if the appetite remains, allow meat with a moderate quantity of beer, wine, or spirits, and give quinine and ammonia as the stomach will bear them. (Mr. H. Coote, p. 378.)

Senile.—Lower the tendency to excitement throughout the system, by enforcing a strictly vegetable diet, abstinence from every kind of stimulant, and the maintenance of perfect quiet in the horizontal posture. Apply linseed poultices, and so long as nocturnal pains continue, give muriate of morphia freely. (Prof. Syme, p. 380.)

Leechbites, *Bleeding from.*—Roll a very small piece of lint into a hard knot, smaller than a pea, and wiping the orifice clean, place this little pad upon it, and draw a long strap of adhesive plaster over it. The elasticity of the skin, pulling upon the plaster, supplies the requisite pressure. (Mr. Vincent, p. 374.)

NÆVUS.—Having threaded a number of needles about twelve or fourteen inches apart from each other, on a long and strong ligature of dentist's silk, let an assistant pinch up the diseased mass, then introduce the first needle at a point just beyond the limits of the part to be removed, pass it through to the opposite side, and draw the ligature out sufficiently to leave an end for tying. Introduce as many more needles as may be required, in a similar manner, at intervals of about half an inch; then cut the ligature near to the eye of each needle so as to leave a series of loops, each embracing but a small portion of the mass to be removed; lastly tie the extremities of these loops respectively with each other. (Mr. Luke, p. 172.)

OZÆNA.—Apply nitrate of silver in substance or strong solution every day; and use a weaker solution of the nitrate, or of sulphate of copper as an ordinary lotion. (Dr. Edwards, p. 254.)

PORRIGO *Scutulata.*—Take of Norway pitch 30 parts, turpeth mineral 15 parts, red oxide of mercury 15 parts, lard 100 parts. Mix. Apply night and morning. (p. 244)

SNAKE-BITE.—Apply a ligature, whenever practicable, above the bite; include the bitten part between the blades of a pair of tenaculum forceps, raise it from the subjacent tissues, and cut it completely out with a scalpel; apply a cupping glass to the wound, or use suction; give stimulants, as brandy, wine, ammonia, or oil of turpentine; bleed, to relieve constriction of the chest, or pain about the heart or head; wash the head, face, and hands, occasionally in cold water; and prevent sound sleep for some time after the injury. (Mr. W. Bland, p. 384.)

ULCERS.—Give proteine, five or ten grains once or twice a day. (Mr. Tuson, p. 383.)

Callous.—Apply a large blister over the sore and the neighbouring swelled part of the limb, and afterwards simple dressings to the sore. (Mr. Syme, p. 234.)

Phagedenic.—Having protected the surrounding skin by a thick coating of cerate, apply lint dipped in strong nitric acid, and afterwards simple dressings and an evaporating lotion. And give wine and bark, with a light nourishing diet. (Prof. Cooper, p. 244.)

Varicose.—Obliteration of the veins is not followed by permanent good. The best application is black wash; if the sore is in an inflamed state, begin the treatment by poulticing; or if there is a complication of the callous condition, blister. (Mr. Syme, p. 235.)

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MIDWIFERY AND DISEASES OF FEMALES.

Abortion.—If, after a careful examination, we find the cervix preserves its normal length, figure, and thickness, we must try to prevent the abortion : but if the cervix is found shortened or distended, and the organ is assuming the oviform-shape, we must assist, by all safe means, the expulsive action. In making this examination, do not introduce the finger into the os. (Dr. Radford, p. 271.)

When there is severe flooding during threatening abortion, evacuate the liquor amnii, pass a conical plug into the os uteri, fill up the vagina behind it, and give one or more doses of ergot. (Dr. Reid, p. 297.)

Amenorrhœa.—The treatment is to be directed to relieve not only uterine disorder, but also ovarian excitement and irritation, both at the menstrual periods, and in the intervals. (Dr. W. Tyler Smith, p. 327.)

Deformity *of the Brim.*—It is proposed to turn the child, and extract by the feet, instead of performing embryotomy, or applying the long forceps. By this operation, the narrowest portion of the cone formed by the fœtal head is first engaged in the contracted brim, and the skull will usually become so indented and compressed in its biparietal diameter, as to allow of its extraction by such force as may be safely applied to the child's neck. Thus the best chance of life is afforded to the child, while, from the early period of labour at which the operation is performed, the mother is spared all the evils which result from protracted pain and long continued pressure on the soft parts. (Dr. Simpson, p. 308.)

When the head is prevented from entering the brim of the pelvis by reason of the diminished diameter of the latter, turning should be had recourse to, in preference to embryotomy or the long forceps; and should be performed early,—the earlier the better. But it should not be undertaken when labour has been long continued—when the strength is exhausted—the uterine energy gone, or the uterus is painfully and permanently contracted: nor is it recommended when the child is dead, the pelvis *very* much contracted, or when the accoucheur is not familiar with the operation. (Dr. James Wilson, p. 319.)

(Dr. Murphy also has tried this mode of practice, and approves of it. p. 322.)

Dysmenorrhœa.—Let chloroform be inhaled when the pain is severe. (Dr. Bennet, p. 416.)

Elongation *of the Cervix Uteri.*—At first, when consisting chiefly in passive congestion, it may be relieved by rest in the horizontal position, and the introduction of a soft sponge to support the parts, and the internal use of iodide of iron, or of mercury. But if permanent hypertrophy remains, excise the part: the operation is perfectly safe and easy, in the absence of specific disease. (Dr. J. M. Coley, p. 332.)

MAMMARY ABSCESS.—Besides evacuating the matter, and applying fomentations and poultices, it is of the greatest consequence to stop the secretion of milk. For this purpose give a hydragogue purgative, as sulphate of magnesia in compound infusion of roses, to which, when there is much hectic and debility, quinine and dilute sulphuric acid may be added. (p. 376.)

PLACENTA PRÆVIA.—The practice, recommended by Dr. Simpson, of entirely detaching the placenta, and leaving it, is likely to be of use in very many instances; as where there is such an unyielding condition of the soft parts as to prevent speedy delivery, or where the flooding has been going on for a considerable time, and the practitioner, on his arrival, finds the bleeding still continuing, and the woman so much exhausted that the sudden emptying of the womb would be dangerous. But this plan by no means supersedes delivery by turning, which, if adopted in a prompt and energetic manner, is a safe and proper method of treatment. (Dr. Waller, p. 291.)

The practice of detaching the placenta is inapplicable in the most formidable cases,—is as difficult to accomplish as turning, and does as much violence to the uterus,—is almost certainly fatal to the child, and affords no increased chance of safety to the mother. If the cause of hemorrhage is ascertained to be placenta prævia, rupture the membranes, introduce the hand, and turn and deliver the child,—provided that the os is sufficiently dilated, or easily dilatable; if it is not, wait, and act upon general principles, till sufficient relaxation has taken place. (Mr. Newnham, p. 298.)

When copious and repeated hemorrhage occurs in the eighth or ninth month of pregnancy, and signs of labour do not appear, evacuate the liquor amnii, pass a conical plug into the os uteri, fill up the vagina behind it, and then give one or more doses of secale. The plug occasions the formation of a large coagulum within the uterus, the presence of which, combined with the irritation caused by the plug, excites uterine contraction. By the expulsion of the clot, the os is dilated, and we are then able to introduce the hand and turn with more facility. (Dr. Reid, p. 297.)

POLYPUS UTERI.—Torsion is applicable only to small soft tumours, and in other cases the ligature is preferable to excision. Apply the ligature by Gooch's apparatus with the double canula and windlass, and take care to apply the noose as close as possible to the bulbous part of the tumour, for fear of including a portion of the uterus. If there is much pain, and it continues after applying a warm stupe to the abdomen, and using the catheter, loosen the ligature. If there is much hemorrhage, plug the vagina. (Dr. Mitchell, p. 354.)

Very small polypi situated high up in the cervix, may be removed by an instrument made for the purpose, consisting of a very small, sharp scoop, like a carpenter's gouge, enclosed in a canula from which it is made to protrude by turning a screw. Larger polypi should be excised; but should first be twisted round several times so as to produce torsion of the arteries; or if they are very large, a ligature should be applied for two or three days, and when the circulation has become well strangulated, the neck of the polypus should be cut through above the noose. (Dr. Locock, p. 355.)

(M. Favrot describes a very simple and ingenious mode of applying the ligature to polypi. See p. 356.)

Prolapsus Uteri.—(Dr. James Reid, and M. Dubois, have each invented an instrument for the support of the prolapsed womb. See p. 351.)

Pregnancy, *Vomiting of.*—If all other means fail in its relief. premature labour must be induced. (Dr. Churchill, p. 263.)

Premature Labour.—In order to bring on premature labour, introduce into the os uteri conical shaped sponge tents, made by dipping portions of sponge in gum arabic, and drying under very strong pressure. It is generally necessary to use several tents, and the last must sometimes be very large. They may be introduced without the speculum. (Dr. Simpson, p. 271.)

To bring on premature labour when there is alarming hemorrhage, evacuate the liquor amnii, pass a conically-shaped plug into the os uteri, filling up the vagina behind it, and then give one or more doses of secale. (Dr. Reid, p. 297.)

Puerperal Convulsions.—Let chloroform be inhaled. (Mr. Kit p. 412, Mr. Fearn, Mr. Clifton, p. 415.)

Retroflexion *of the Uterus.*—In recent cases, replace the organ by the uterine sound, and let the woman lie for a length of time on the side or face: at the same time prevent accumulation in the rectum or bladder, and restore the tone of the parts by astringent injections. In more chronic cases, besides the above means, such treatment must be adopted as will relieve other co-existing disease, as congestion or chronic inflammation of the uterus or ovaries; and after the uterus has been restored to its position, it must be retained there by wearing one of Dr. Simpson's wire pessaries. (Dr. Simpson, p. 337, Dr. Beattie, p. 345, Dr. Hensley, p. 350.)

The best plan of proceeding, in the introduction of the sound or uterine pessary for retroflexion, is to place the female on her knees and elbows, with her face on a pillow. Then placing the forefinger of the left hand upon the os uteri, the point of the sound is very easily passed into the cervix, and by gently depressing the handle, as with the male catheter, the sound passes to the fundus uteri. (Mr. Braithwaite, p. 339.)

Rigidity *of the Os Uteri.*—Give emetic tartar, in doses of a quarter of a grain every four hours, and follow it by a full dose of opium. If this fail, make slight incisions in the os uteri. (Dr. Lever, p. 305.)

Mechanical dilatation by the fingers is more advisable than the use of tartar emetic. (Dr. Murphy, p. 305.)

When there is a hot skin, and quick full pulse, we may bleed, and nauseate with tartar emetic, give a turpentine or emollient enema to clear out the bowels, and then a full opiate, and smear the os and cervix freely with extract of belladonna. If these means fail, incise the os uteri on each side with a probe-pointed bistoury. (Mr. Barrett, Dr. Edwards, p. 306.)

Let chloroform be inhaled. (Mr. Brown, Dr. Arnott, and others, p.p. 410–412.)

Of the External Parts.—Let chloroform be inhaled. (Dr. Rigby, Dr. Murphy, and others, p.p. 410—413.)

Sterility.—When it is due to a contracted state of the os and cervix, let the parts be dilated by the use of metallic tents; or, if the effect of these proves to be only temporary, by the division of the anterior lip of the os uteri and corresponding part of the canal of the cervix. At the same time if the os uteri is ulcerated or granular, let nitrate of silver be applied *sec. art.*, and let the general health be improved by the use of such tonics and alteratives as seem best adapted to the case. If sterility depends upon oophoritis, in addition to the general tonic treatment, local antiphlogistic measures, leeching, &c., will be required. And if retroversion of the uterus be the cause, it must be remedied *sec. art.* (Dr. Rigby, p. 272.)

Varicose Ulcer *of the Os Uteri.*—Bleed from the arm, and cup, or apply leeches; confine the patient strictly to the recumbent posture, and give three to five grains of calomel, with hyoscyamus or opium, followed by a saline aperient. Apply to the ulcer at first a strong solution of nitrate of silver, and afterwards the solid caustic: and if there is much discharge of blood, apply strong solution of sulphate of zinc with vin. opii and tincture of matico. (Or gallic or tannic acid, in the form of solution or ointment.) (Mr. Whitehead, p. 331.)

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MISCELLANEA.

Adhesive Plaster. — Liquid India-rubber spread upon calico, soft leather, or vulcanized caoutchouc, forms an excellent kind of adhesive plaster, less irritating than the ordinary plaster, and equally or more adhesive. (Mr. D. F. Eyre, p. 375.)

Chloroform.—Use the chloroform made in Edinburgh, in preference to that generally met with in England. (Dr. Clay, p. 404.)

Employ an inhaler; and do not let complete insensibility be produced in less than two or three minutes. (Dr. Snow, p. 395.) Let the vapour be largely diluted with air for the first few inhalations; and do not continue the inhalation one instant after the pupils, previously contracted, have begun to dilate, remembering the cumulative property which the vapour possesses. In neuralgia, it is unnecessary to produce unconsciousness, if the pain previously disappears; in chorea, delirium tremens, &c., the state of sopor should be produced; while in hernia, dislocations, or tetanus, where complete muscular relaxation is desired, the inhalation must be continued till coma supervenes, but then discontinued as soon as the necessary effect is secured. (Mr. Sibson, p. 392.) Do not apply the handkerchief quite close to the face; and remember that as soon as slowness of respiration or a degree of snoring is produced, it is only necessary to continue the inhalation at intervals, so as to keep up the sopor. In midwifery, a profound state of insensibility is not needed, except when we wish to turn, &c. The best way is to give a large dose at first, so as to get the woman fully under its influence, and then by withdrawing the handkerchief diminish the sopor, till the head is passing the vulva, when a deeper anæsthesia is required.—(Dr. Simpson, p. 401.)

Do not exhibit chloroform when there is any disease of the heart, aneurism of the great vessels, threatening dyspnœa, or tendency to engorgement of the lungs. (Mr. Wakley, p. 394.) Do not give chloroform in a state of extreme shock. (Mr. Curling, p. 400.)

When alarming symptoms arise from the use of chloroform, remove the handkerchief or inhaler, and admit air freely to the face; do nothing else, except sprinkling cold water on the face, or otherwise trying to excite inspiratory acts; above all do not try to make the patient swallow anything when in a state of insensibility. If further means are required, resort to artificial respiration. (Dr. Simpson, p. 418.) If respiration becomes suspended from the use of chloroform, we must establish artificial respiration, and, in some cases, abstract two or three ounces of blood from the jugular. (Mr. Sibson, p. 394.)

Disinfection.—Pound the well dried raw bean of coffee, and strew it over a moderately heated iron plate till the powder assumes a dark brown tint; it will then remove almost any noxious effluvium. (M. Weber, p. 390.)

Electricity.—A convenient form of application is by simple friction with "the electrical cloth," a species of *pyroxyline*, made by digesting cotton or linen cloth in nitro-sulphuric acid. (M. Meynier, p. 371.)

Ether.—Ether is much preferable to chloroform for producing anæsthesia in children. (Dr. Snow, p. 396.)

Ether is more suitable than chloroform, in persons whose powers are much depressed, and in those cases in which we desire to prolong the insensibility for some time, or in which we wish to obtain muscular relaxation. (Mr. Curling, p. 399.)

In extreme exhaustion from hemorrhage, ether is more applicable than chloroform. (Dr. P. Smith, p. 416.)

Ligatures.—Fibres torn from the sinew of the deer, and twisted to the required strength, may be used, and when tied, both ends may be cut off, in the expectation that the knot will be removed by absorption. (Mr. Wragg, p. 377.)

Operations.—Before undertaking an operation, ascertain well the state of a patient's health, as to the existence or absence of organic disease, the condition of the bowels, state of the urine, &c. And always employ preparatory treatment for some time previously to subjecting a patient to even the most trivial operation. (Mr. B. Cooper, p. 169.)

Ventilation.—A cheap and convenient mode of ventilating a room, is to make a hole through the wall into the chimney, two or three inches in diameter; nothing more is required. The hole may be concealed by a picture hung diagonally, or any similar contrivance. (Mr. Small, p. 387.)

Vesication.—Is easily effected by putting six drops of a mixture of one part of liq. ammon. fortissim., and two of olive oil, on the woollen side of a bit of spongio-piline, and pressing it against the skin for about ten minutes. (p. 387.)

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INDEX TO VOL. XVII.

	ART.	PAGE.
Abortion, Dr. W. T. Smith, on the causes of,	128	265
—— Dr. Radford on	130	271
Abscess, mammary, treatment of	165	376
Acetate of lead, use of, in distention of the bowels,	54	134
Acidity of the animal fluids, M. Mialhe on	57	136
Aconitina, case of recovery from a large dose of	161	372
Affusion, cold, in hysteria	25	58
Aldehyde, the new anæsthetic, account of	186	404
Amenorrhœa, Dr. W. T. Smith on	140	327
Amputations, Dr. Fenwick on the mortality of	76	158
Anasarca, case of, treated by digitalis	12	21
—— buchu	13	23
Anderson, Dr., his case of delirium tremens	19	50
—— Dr. T., his case of poisoning	160	371
Andral, M., on signs derivable from paralysis	16	41
Aneurism, Dr. Bellingham on the treatment of	81	174
Aphonia, case of, treated by benzoin fumes	47	105
Arnott, Dr., on the use of chloroform	186	411
Arthritis, chronic, MM. Guerard and Briquet on	71	154
Ascites, case of, treated by buchu	13	23
Ashwell, Dr., on the use of chloroform in labour	186	413
Asthma, spasmodic, treated by chloroform	46	104
Atkinson, Mr., on the use of vinegar in rheumatism	10	18
Auscultation, alphabet of	33	73
—— a new method of	32	67
Baddeley, Dr. J. C., on flatulent distention of the bowels	54	134
Baly, Dr., on the irritability of muscle	15	36
Barker, Dr. H., on the treatment of burns	111	242
Barrett, Mr., his case of rigidity of the os uteri	136	306
Bean, M., on impaired digestion	50	107
Beattie, Dr., on retroflexions of the uterus	145	344
Bedsores, mode of preventing	166	377
Bell, Dr. C. W., on Asiatic cholera	52	108
Bellingham, Dr., on the treatment of aneurism	81	174
Bennet, Dr. Henry, on inflammation of the uterine appendages	142	329
—— on the use of chloroform in dysmenorrhœa	186	416
Bennett, Dr. Hughes, on cod-liver oil	155	365
Benzoin, use of, in aphonia	47	105
Bird, Dr. Golding, on the uric acid of healthy urine	59	140
—— his case of poisoning	161	372
Black, Dr. G., on the treatment of burns	111	244
Bladder, remarkable case of diseased	63	146
Bland, Mr. W., on the treatment of snake-bite	170	380

	ART.	PAGE.
Blood, in fever, on the change in the	1	1
——— in gout and rheumatism, Dr. Garrod on the	7	12
——— physical examination of	29	63
Bowman, Mr. W., on opacities of the cornea	120	250
——— on sloughing of the cornea	119	248
Brière de Boismont, M., on mania	27	61
Bright, Dr., on intestinal obstructions	88	197
Bright's disease, Dr. Garrod on the blood in	7	12
Bronchitis, Mr. Corfe on the sounds of	40	89
——— Dr. West on the effects of	41	90
——— on the treatment of, in children	42	92
Bronchus, case of foreign body in the	84	180
Buchanan, Dr. on lithotomy	101	214
Buchu, use of, in anasarca and ascites	13	23
Burns, on the treatment of	111	237
——— on the pathology of	111	237
Bushnan, Dr., on the uses of carvacrol	24	57
——— on the use of the polariscope	61	144
Calculus, encysted, cases of	102	221
Camino, M., his case of loss of speech	28	62
Camphor, use of, in fever	2	3
Caries, Mr. Tuson on the treatment of	172	382
Cartilages loose, Mr. B. Cooper on	70	153
——— semilunar, displacement of	69	152
Carvacrol, use of, in toothache	24	57
Cary, Mr., his case of tetanus	17	44
Chandler, Mr., his case of asthma	46	104
Chassiagnac, M., on the ophthalmia of infants	118	248
Chilblains, Mr. S. Cooper on the treatment of	116	247
Children, the frequency of pulmonary diseases in	39	88
Childs, Mr., his case of hernia	94	209
Chlorine fumigation, new apparatus for	184	391
Chloroform, effects, uses, and administration of	186	392
——— fatal result from the use of	186	416
——— Mr Nunneley on the topical application of	186	423
——— treatment of poisoning by	186	422
——— use of, in spasmodic asthma	46	104
——— use of in delirium tremens	19	52
——— use of, in dislocations	68	152
——— use of, in dysmenorrhœa	186	416
——— use of, in fever	3	5
——— use of, in strangulated hernia	92	206
——— use of, in midwifery	186	405
——— use of, in neuralgia	21	55
——— use of, in puerperal convulsions	186	412
——— use of, in rigidity of the os uteri	186	410
——— use of, in idiopathic tetanus	17	44
——— use of, in traumatic tetanus	19	53
Cholera, Asiatic, Dr. C. W. Bell on	52	108
——— Dr. King on	52	126
——— Dr. Massy on	52	126
——— Dr. Turnbull on	52	131
——— Dr. Ward on	52	122
——— Dr. Watson on	52	130
——— Mr. French on	52	124
——— Mr. M'Coy on	52	130
——— Mr. Thorn on	52	118
Chorea, treatment of, by tartar emetic	20	54
——— treatment of, by tartar emetic	26	61
Christophers, Mr. J. C., his cases treated by galvanism	158	369

	ART.	PAGE.
Churchill, Dr., on vomiting during pregnancy	127	262
Circulation, on obstructions of the	30	64
Clay, Dr. C., on ulceration of the lining membrane of the uterus	141	329
——— on the chloroform of London and Edinburgh	186	404
Clifton, Mr., his case of puerperal convulsions	186	414
Cod-liver oil, on the uses of	11	18
——— Dr. Bennett on the action of	155	365
Coffee, use of, as a disinfectant	182	380
Cold affusion, use of, in delirium tremens	19	48
Coley, Dr., on diphtherite	48	106
——— his suppository syringe	56	136
——— on elongation of the cervix uteri	144	332
Constipation, treated by ox-gall	55	135
Contagion of yellow fever, on the	4	5
Cooper, Mr. B., on distortions of the spine	66	148
——— on gonorrhœal synovitis	72	155
——— on inflammation of ligament	73	155
——— on loose cartilage	70	153
——— on mollities ossium	65	148
——— on the necessity of preparatory treatment before operation	77	168
——— on the treatment of fractures	64	147
——— on the treatment of ganglion	74	156
——— on traumatic erysipelas	115	245
——— on ulcer of the rectum	99	212
——— Mr. S. on phagedenic ulcers	112	244
——— on the treatment of chilblains	116	247
——— on the varieties and treatment of burns	111	235
Coote, Mr. H., on hospital gangrene	168	377
Copland, Dr. on intestinal obstructions	88	197
——— on obstructed circulation	30	64
——— on the physical examination of blood	29	63
——— on the state of the blood in fever	1	1
Corfe, Mr., on chorea	20	54
——— on delirium tremens	19	47
——— on heautophonics	32	67
——— on hysteria	25	58
——— on intoxication	18	45
——— on the sounds of bronchitis	40	89
Cornea, Mr. Bowman on opacities of the	120	250
——— on sloughing of the	119	248
Corneitis, Dr. Jacob on the treatment of	121	251
Cornwall, Dr., his chloroform inhaler	186	404
Coryza maligna, Dr. West on	34	74
Coulson, Mr., on the operation for hernia	90	203
Croup, Dr. West on the treatment of	36	77
——— spasmodic, Dr West on	37	82
Curling, Mr., on the uses of chloroform and ether	186	399
Day, Dr. G. E., on the formation of fat	157	367
Deafness following scarlatina, Dr. Morrell on	125	256
Delirium tremens, Mr. Corfe on	19	47
——— Mr. Solly on the diagnosis of	19	49
——— caused by smoking	19	50
——— treated by chloroform	19	52
——— treated by ether	19	51
Diabetes, Dr. R. B. Todd on	60	144
——— treated by turpentine	62	145
Dick, Dr. R., on flatulence	53	132
Digestion, impaired, new diagnostic of	50	107
Digitalis, use of in anasarca	12	21

	ART.	PAGE.
Diphtherite, Dr. Coley and others on	48	106
Disinfection, Mr. Young's new agent for	183	391
——— use of coffee for	182	390
Dislocation of the fore-arm, Dr. Stapleton on	174	385
——— of the humerus, case of	68	152
——— of the radius, case of	67	149
Dixon, Mr. J., on rheumatic iritis	122	252
Donovan, Mr., on tincture of acetate of iron	178	387
Dorning, Mr., on the treatment of burns	111	241
Douche, use of, in the ophthalmia of children	118	248
Dubois, M., his instrument for prolapsus uteri	148	352
Duncan, Dr., on the operation for hernia	90	200
Dysmenorrhœa, use of chloroform in	186	416
Edwards, Dr., on the treatment of rheumatism and gout	8	14
——— on the treatment of scrofulous ophthalmia	123	253
Electricity, new mode of applying	159	371
Electro-galvanism, cases treated by	158	369
Electro-magnetism, use of, in neuralgia	23	57
Epilepsy, Dr. M. Hall on the theory of	14	24
Erichsen, Mr., on the pathology of burns	111	237
Erysipelas, a cause of puerperal fever	139	325
——— traumatic, Mr. B Cooper on	115	245
Ether, effects of, compared with those of chloroform	186	392
——— use of, in delirium tremens	19	50
Eyre, Mr. D. F., on the use of India-rubber as sticking plaster	164	375
Fairbrother, Dr., on chloroform in typhus	3	5
Fat, Dr. Day on the formation of	157	367
Favrot, M., his mode of applying ligatures to polypi	151	356
Fearn, Mr , his case of puerperal convulsions	186	414
Fenwick, Dr., on the mortality after amputations	76	158
Fever, Dr. Copland on the blood in	1	1
——— puerperal, Mr. West on	139	325
——— use of camphor in	2	3
——— use of chloroform in	3	5
——— yellow, on the contagion of	4	5
Fisher, Mr. F. W., on sea-sickness	163	375
Fistula, on the abscesses which precede	100	214
——— recto-urethral, case of	98	212
Flatulence, Dr. J. C. Baddeley on	54	134
——— Dr. Dick on	53	132
Fracture, Mr. Cooper on the treatment of	64	147
French, Mr., on Asiatic cholera	52	124
Galvanism, Mr. Christophers on the uses of	158	369
Galvano-puncture, use of in partial paralysis	28	62
Ganglion, Mr. Cooper on the treatment of	74	156
Gangrene, hospital, Mr. H. Coote on	168	377
——— senile, Mr. Syme on	169	379
Garrod, Dr., on the blood and urine	7	12
——— on the cause of scurvy	6	9
Gastralgia, chronic, M. Valleix on	51	108
Gay, Mr., on the operation for hernia	93	207
Giraud, Mr. F. F., his case of recto-urethral fistula	98	212
Glottis, Dr. Jameson on œdema of the	83	178
Gonorrhœa, M. Ricord on the treatment of	105	227
Goodman, Mr., his case of Cæsarian operation	138	323
Gordon, Dr., his case of delirium tremens	19	50

	ART.	PAGE.
Gout, Dr. Garrod on the blood in	7	12
—— Dr. Edwards on the treatment of	8	14
Greenhow, Mr. T. M., on the treatment of burns	111	239
Griffin, Mr , on placenta prævia	133	294
Guerard and Briquet, MM., on chronic arthritis	71	154
Guersant, M., his plan of inhaling ether	186	403
Guthrie, Mr., on the treatment of pleurisy and pneumonia	44	101
———— on wounds of the chest	85	180
Hæmorrhage from leech-bites, mode of arresting	162	374
———— uterine, Dr. Tyler's cases of	134	302
———— uterine, Mr. Newnham on	132	279
Hæmorrhoids, Mr. Taylor on the treatment of	97	211
———— how to arrest bleeding from	95	210
Hall, Dr. Marshall, on convulsive diseases	14	24
———— on the irritability of muscle	15	34
Hancock, Mr., his case of disease of the bladder	63	146
Hancorn, Mr., his case of rigidity of the os uteri	186	412
Headache, Dr. Murphy on	153	358
Heautophonics, Mr. Corfe on	32	67
Hensley, Dr., on retroflexion of the uterus	145	346
Hernia, strangulated, Dr. Duncan, &c., on the operation for	90	200
———— Mr. Child's case of	94	209
———— Mr Gay on the operation for	93	207
———— Mr. Hunt on the use of the taxis in	91	205
———— Mr. Pope's case of	91	205
———— use of chloroform in	92	206
Higginbottom, Mr., on the treatment of burns	111	241
Hilton, Mr., on intestinal obstructions	88	196
———— on the operation for hernia	90	202
Hooper, Mr., his case of delirium tremens	19	53
Hooping-cough, Dr. West on	38	84
Hoskins, Mr., his case of ascites	13	23
Hysteria, Mr. Corfe on	25	58
Hughes, Dr. J. S., his case of strangulated hernia	92	206
Hunt, Mr , on the use of the taxis	91	205
Ileus, Mr. Mackenzie on	89	199
—— Mr Phillips, &c. on	88	195
India-rubber, use of, as adhesive plaster	164	375
Inflammation of ligaments, Mr. Cooper on	73	155
Intoxication, Mr. Corfe on	18	45
Iodized oil, uses of	156	366
Iritis, rheumatic, Mr. Dixon on	122	252
Jacob, Dr., on the treatment of corneitis	121	251
Jameson, Dr., on œdema of the glottis	83	178
King, Dr., on Asiatic cholera	52	126
—— on scrofula	5	6
Kite, Mr., his case of puerperal convulsions	186	412
Labour, premature, Dr. Simpson's mode of inducing	129	271
Lafargue, Mr., his case of strangulated hernia	92	207
Lallemand, M., on spermatorrhœa	104	224
Lansdown, Mr., on the use of chloroform	186	397
Laryngitis, Dr. Ward's case of	35	76
Lebert, Dr., on the structure of tubercle	31	66
Lee, Dr. R., on placenta prævia	133	300

	ART.	PAGE.
Lever, Dr., on rigidity of the os uteri	136	305
Ligament, Mr. Cooper on inflammation of	73	155
Ligatures, animal, use of	167	377
Lithotomy, Dr. Buchanan on	101	214
Locock, Dr., on polypus uteri	150	355
Luke, Mr., on the extirpation of nævi	79	172
—— on the operation for hernia	90	201
Mackenzie, Mr., on internal strangulation of the bowels	89	199
Malan, Mr., his new tourniquet	82	177
Mania, acute, treatment of	27	61
Marchal, M., on iodized oil	156	366
Massy, Dr., on Asiatic cholera	52	126
M'Coy, Mr., on Asiatic cholera	52	130
M'Donald, Mr., his case of anasarca	12	21
Meadows, Mr., his case of placenta prævia	133	294
Medical Gazette, Editor of, on the fatal chloroform case	186	419
Meggison, Dr., on the fatal chloroform case	186	416
Mialhe, M., on acidity of the animal fluids	57	136
Milk, table of the composition of	181	390
Miller, Prof., his case of encysted calculus	102	221
Mitchell, Dr. T. R., his case of polypus uteri	149	352
Mollities ossium, treated by phosphate of lime	65	148
Monster, Mr. West's case of	154	360
Morrell, Dr., on deafness following scarlatina, &c.	125	256
Murphy, Dr., on certain forms of headache	153	358
—— on ether inhalation in midwifery	186	409
—— on the use of chloroform in midwifery	186	413
—— on turning in deformity of the brim	137	322
Murray, Sir James, on the use of camphor	2	3
Myringitis, subacute, Mr. Wilde on	124	254
Nævus, Mr. Luke's mode of treatment for	79	172
Naudin, Dr., on chronic enlargement of the tonsils	49	107
—— on chronic enlargement of the tonsils	87	194
Nerves, Dr. T. Williams on the electrical state of	15	39
Neuralgia, treatment of, by actual cautery	22	56
—— treatment of, by chloroform	21	55
—— treatment of, by electro-magnetism	23	57
Newbigging, Dr., his case of encysted calculus	102	223
Newnham, Mr., on placenta prævia	133	298
—— on the treatment of burns	111	244
—— on uterine hemorrhage	132	279
Nichol, Dr., on muriate of opium	179	389
Nitrate of silver, use of, in burns	111	241
—— use of, in scrofulous ophthalmia	123	253
Œdema of the glottis, Dr. Jameson on	83	178
—— of the lungs, Dr. West on	45	103
Œsophagus, extraction of a fish hook from the	173	384
Ogden, Dr., his case of imperforate vagina	135	303
Operation, Cæsarian, case of	138	323
—— new, for hernia	93	207
—— new, for phymosis	109	233
—— new, for stone	101	214
—— new, for tarsal tumour	171	381
—— on the necessity of preparatory treatment before	77	168
Ophthalmia, gonorrhœal, M. Ricord on	117	247
—— purulent, treatment of	118	248
—— scrofulous, treatment of	123	253
Oxgall, use of in constipation	55	135

	ART.	PAGE.
Page, Mr., his case of dislocation	68	152
Paralysed muscles, on the irritability of	15	34
Paralysis, M. Andral on the semeiology of	16	41
——— partial, cured by galvano-puncture	28	62
Parsons, Mr., his case of rigidity of the os uteri	186	411
Pettigrew, Mr., his new caustic holder	177	387
Phillips, Mr., on intestinal obstruction	88	195
Phosphate of ammonia in gout and rheumatism	8	14
——— of lime, use of, in mollities ossium	65	148
Phymosis, M. Ricord's operation for	109	233
Placenta prævia, Dr. Simpson and others on	133	284
Pleurisy, Mr. Guthrie on the treatment of	44	101
Pneumonia, Dr. West on the treatment of in children	43	99
——— Mr. Guthrie on the treatment of	44	101
——— lobular, Dr. West on	43	94
Poggiale, M., on aldehyde	186	404
Poisoning, by aconitina, case of	161	372
——— by strychnia, case of	160	371
Polariscope, Dr. Bushnan on the	61	144
Polypus uteri, Dr. Locock on	150	355
——— Dr. Mitchell's case of	149	352
——— new mode of applying ligatures to	151	356
Pope, Mr., his case of strangulated hernia	91	205
Porrigo, ointment for	113	244
Potter, Mr. H. G., on the fatal chloroform case	186	417
Preservative fluid, Dr. Stapleton's new	185	392
Prolapsus ani, Mr. Taylor on the treatment of	97	211
——— Mr. Vincent on the treatment of	96	210
Prolapsus uteri, Dr. Reid's instrument for	147	351
——— M. Dubois' instrument for	148	352
Proteine, use of, in caries	172	382
Puerperal convulsions, use of chloroform in	186	412
Purefoy, Dr., on the prevention of bedsores	166	377
Quain, Mr., on the operation for hernia	90	204
Quinine, use of, in acute rheumatism	9	17
Radford, Dr., on abortion	130	271
——— on turning in deformity of the brim	137	318
Ranking, Dr., his case of neuralgia	23	57
Ray, Mr., his cases of placenta prævia	133	292
Rayner, Mr., his case of foreign body in the bronchus	84	180
Rectum, Mr. Cooper on ulcer of the	99	212
Rees, Dr. G. O., on alkaline urine	58	139
Reid, Dr., his instrument for prolapsus uteri	147	351
——— on placenta prævia	133	292
Rheumatism, Dr. Edwards on the treatment of	8	14
——— state of the blood and urine in	7	12
——— treatment of by quinine	9	17
——— treatment of by vinegar	10	18
Ricord, M., his operation for phymosis	109	233
——— on gonorrhœa and urethral chancre	105	227
——— on gonorrhœal ophthalmia	117	247
——— on the hereditary transmission of syphilis	108	232
Rigby, Dr. E., on sterility	131	272
——— on the use of chloroform in midwifery	186	410
Rigidity of the os uteri, chloroform in	186	410
——— Dr. Lever on	136	305
——— Mr. Barrett's case of	136	306
Robinson, Mr., his chloroform inhaler	186	402

	ART.	PAGE.
Salgues, M., his case of chorea	26	61
Scabies, use of oil in	114	245
Scrofula, Dr. King on	5	6
Scurvy, Dr. Garrod on the nature of	6	9
Sea-sickness, Dr. Fisher on	163	374
Seddon, Dr. J., his case of retroversion	146	350
Semilunar cartilages, luxation of the	69	152
Sibson, Mr., his cases of neuralgia	21	55
——— on the effects of chloroform	186	392
Simpson, Prof., his case of fibrous tumour of the uterus	152	357
——— his cases of chloroform inhalation in midwifery	186	405
——— his mode of inducing premature labour	129	271
——— on chloroform inhalation	186	401
——— on placenta prævia	133	284
——— on retroflexion of the uterus	145	333
——— on the fatal chloroform case	186	417
——— on turning, in deformity of the brim of the pelvis	137	308
Sisovics, M., on the treatment of syphilis	107	231
Smith, Dr. Protheroe, on flexions of the uterus	145	340
——— on the use of chloroform	186	416
——— Dr. W. Tyler, on amenorrhœa	140	327
——— on reflex uterine action	126	257
——— on the causes of abortion	128	265
——— Mr., his apparatus for chlorine fumigation	185	391
Snake-bites, Mr. Bland on the treatment of	170	380
Snow, Dr., on the exhibition and effects of chloroform	186	394
——— on the fatal chloroform case	186	421
Solly, Mr., on the diagnosis of delirium tremens	19	49
Spermatorrhœa, M. Lallemand on	104	224
Spine, Mr. Cooper on distortions of the	66	148
Stapleton, Dr. M. H., on a new preservative fluid	185	392
——— on dislocation of the fore-arm	174	385
Stark, Dr. J., his case of dislocated radius	67	149
Sterility, Dr. Rigby on	131	272
Strychnia, case of recovery from a large dose of	160	371
Suppository syringe, Dr. Coley's new	56	136
Syme, Prof., his case of tumour of the neck	78	170
——— on callous ulcers	110	234
——— on senile gangrene	169	379
Synovitis, gonorrhœal, Mr. Cooper on	72	155
Syphilis, M. Ricord on the transmission of	108	232
——— the constitutional, of infants	106	230
——— treatment of, in Austria	107	231
Tartar emetic, use of, in chorea	20	54
——— use of, in chorea	26	61
Taxis, use of, in strangulated hernia	91	205
Taylor, Mr., on hæmorrhoids and prolapsus ani	97	211
Teeth, artificial, Mr. Tomes on	86	190
——— Mr. Tomes on the extraction of	86	185
——— on plugging	86	182
——— on scaling	86	181
Tetanus, idiopathic, treated by chloroform	17	44
——— traumatic, treated by chloroform	19	53
Thorn, Mr., on Asiatic cholera	52	118
Tobacco, a cause of delirium tremens	19	50
Todd, Dr., on intestinal obstructions	88	196
——— on the irritability of muscle	15	36
——— on the pathology of diabetes	60	144
Tomes, Mr., on dental surgery	86	181
Tonsils, Dr. Naudin on enlargement of the	49	107
——— on enlargement of the	87	194

	ART.	PAGE.
Toothache, treatment of, by carvacrol	24	57
Tourniquet, description of a new	82	177
Travers, Mr., on intestinal obstructions	88	197
Trousseau, M., on the syphilis of infants	106	230
Tubercle, Dr. Lebert on the structure of	31	66
Tumours of the neck resembling aneurism	78	170
——— tarsal, Mr. Wilde's instrument for	171	381
Turnbull, Dr., on Asiatic cholera	52	131
Turning, a substitute for craniotomy and the long forceps	137	308
Turpentine, use of, in diabetes	62	145
Tuson, Mr., on the treatment of caries	172	382
Tyler, Dr. A., his cases of internal hemorrhage	134	302
Ulcers, callous, Mr. Syme on	110	234
——— of the rectum, Mr. B. Cooper on	99	212
——— phagedenic, Mr. S. Cooper on	112	244
——— varicose, Mr Syme on	110	234
——— varicose, of the os uteri, Mr. Whitehead on	143	331
Uric acid, its existence in healthy urine	59	140
Urine, alkaline, Dr. Rees on	58	139
——— Dr. Garrod's observations on the	7	12
——— dry cupping in retention of	103	224
——— healthy, on the existence of uric acid in	59	140
——— use of the polariscope in testing	61	144
Uterine action, Dr. W. Tyler Smith on	126	257
——— appendages, Dr. Bennet on inflammation of	142	329
Uterus, case of fibrous tumour of the	152	357
——— case of ulceration of the lining membrane of the	141	328
——— Dr. Coley on elongation of the neck of the	144	332
——— Dr. Seddon's case of retroversion of the	146	350
——— Dr. Simpson and others on retroflexions of the	145	333
Vagina, Dr. Ogden's case of imperforate	135	303
Valleix, M., on chronic gastralgia	51	108
Vandenbroeck, M., on retention of urine	103	224
Vanderpool, Dr. E., on the efficacy of ox gall	55	135
Ventilation, simple method of	175	387
Vesication, rapid mode of procuring	176	387
Vinegar, use of, in rheumatism	10	18
Vincent, Mr. J. P., on bleeding from leechbites	162	374
——————— on fistula in ano	100	214
——————— on luxation of the semilunar cartilages	69	152
——————— on the excision of piles	95	210
——————— on the treatment of prolapsus ani	96	210
Vomiting of pregnancy, Dr. Churchill on the	127	262
Wakley, Mr. T., his case of ether-inhalation	186	399
—————— his experiments with chloroform	186	394
—————— his new operation on the foot	75	157
Waller, Dr., on placenta prævia	133	286
Ward, Dr., on Asiatic cholera	52	122
——— Dr. T. O., his case of laryngitis	35	76
Warwick, Mr., his case of delirium tremens	19	52
Watson, Dr., on Asiatic cholera	52	130
Weber, M., on coffee as a disinfecting agent	182	390
West, Dr. C., on coryza maligna	34	74
————— on lobular pneumonia	43	94
————— on œdema of the lungs	45	103
————— on spasm of the glottis	37	82

	ART.	PAGE.
West, Dr. C., on the effects of bronchitis in children	41	90
——— on the frequency of pulmonary disease in children ..	39	88
——— on the treatment of bronchitis in children	42	92
——— on the treatment of croup	36	77
——— on the treatment of hooping-cough	38	84
——— on the treatment of pneumonia in children	43	99
—— Mr. R., his case of monster	154	360
——— on puerperal fever	139	325
Westall, Mr., on the preparation of decoction of aloes	180	389
Whitehead, Mr., on varicose ulcer of the cervix uteri	143	331
Wilde, Mr. W. R., on subacute myringitis	124	254
——— on tarsal tumours	171	381
Williams, Dr. T., on animal electricity	15	39
Willis, Dr., his case of death from air entering a vein	80	173
Wilson, Dr. James, on turning in deformity of the brim	137	309
——— Mr. E, his chloroform inhaler	186	402
Worthington, Mr., his case of tetanus	19	53
Wounds of the chest, Mr. Guthrie on	85	180
Wragg, Mr., on animal ligatures	167	377
Young, Mr., his deodorizing agent	183	391

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